

UNIV. OF
TORONTO
LIBRARY



Med
A

THE JOURNAL

OF THE

American Medical Association.

CONTAINING

THE OFFICIAL RECORD OF ITS PROCEEDINGS,

AND THE

REPORTS AND PAPERS PRESENTED IN THE SEVERAL SECTIONS.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS, M.D., LL.D.

ASSISTED BY WM. G. EGGLESTON, M.A., M.D., AND N. S. DAVIS, JR., M.A., M.D.

VOLUME XI.

JULY—DECEMBER.

1888.

398284
28.11.41

CHICAGO :

PRINTED AT THE OFFICE OF THE ASSOCIATION,
1888.

"The American Medical Association, though formally accepting and publishing the reports of the various Standing Committees (and Sections), holds itself wholly irresponsible for the opinions, theories, or criticisms therein contained, except otherwise decided by special resolution."—TRANSACTIONS, 1851.

R

15

A 48

v. 11

cop. 2

CONTRIBUTORS TO VOLUME XI.

D. Hayes Agnew, Philadelphia, Pa.
 Edmund Andrews, Chicago, Ill.
 E. W. Andrews, Chicago, Ill.
 Robert H. Babcock, Chicago, Ill.
 Henry B. Baker, Lansing, Mich.
 J. R. Barnett, Neenah, Wis.
 Isador Bermann, Washington, D. C.
 Boerne Bettman, Chicago, Ill.
 Horatio R. Bigelow, Washington, D. C.
 S. S. Bishop, Chicago, Ill.
 I. W. Blackburn, Washington, D. C.
 C. V. Boarman, Washington, D. C.
 Alexander Boggs, Paris, France.
 C. S. Bond, Richmond, Ind.
 Nathan Bozeman, New York City.
 E. H. Bradford, Boston, Mass.
 Wm. C. Brittan, Detroit, Mich.
 Daniel R. Brower, Chicago, Ill.
 Bedford Brown, Alexandria, Va.
 J. W. Brown, Mottville, N. Y.
 John Young Brown, Henderson, Ky.
 John J. Buchanan, Pittsburgh, Pa.
 L. Duncan Bulkley, New York City.
 James Burry, Chicago, Ill.
 Samuel C. Busey, Washington, D. C.
 D. S. Campbell, Detroit, Mich.
 J. M. G. Carter, Waukegan, Ill.
 W. Cheatham, Louisville, Ky.
 Julian J. Chisolm, Baltimore, Md.
 Augustus P. Clarke, Cambridge, Mass.
 W. Franklin Coleman, Chicago, Ill.
 P. S. Conner, Cincinnati, Ohio.
 G. Wythe Cook, Washington, D. C.
 William T. Corlett, Cleveland, Ohio.
 J. D. Cowden, Rock Island, Ill.
 H. Culbertson, Zanesville, Ohio.
 J. S. Dorsey Cullen, Richmond, Va.
 Ephraim Cutter, New York City.
 I. N. Danforth, Chicago, Ill.
 N. S. Davis, Jr., Chicago, Ill.
 N. S. Davis, Sr., Chicago, Ill.
 T. D. Davis, Pittsburgh, Pa.
 H. D. Didama, Syracuse, N. Y.
 B. A. Duncan, West Point, Miss.
 Chas. Warrington Earle, Chicago, Ill.

Robert T. Edes, Washington, D. C.
 Wm. G. Eggleston, Chicago, Ill.
 Joseph Eichberg, Cincinnati, Ohio.
 Llewellyn Eliot, Washington, D. C.
 Rosa H. Engert, Chicago, Ill.
 Orpheus Everts, College Hill, Ohio.
 Christian Fenger, Chicago, Ill.
 Geo. E. Frothingham, Ann Arbor, Mich.
 J. McFadden Gaston, Atlanta, Ga.
 H. Landis Getz, Marshalltown, Iowa.
 Albert L. Gihon, U. S. Navy.
 William Goodell, Philadelphia, Pa.
 S. C. Gordon, Portland, Me.
 H. Gradle, Chicago, Ill.
 H. H. Grant, Louisville, Ky.
 B. M. Griffith, Springfield, Ill.
 S. W. Gross, Philadelphia, Pa.
 Rufus B. Hall, Cincinnati, Ohio.
 John B. Hamilton, U. S. Marine Hospital Service.
 Geo. Byrd Harrison, Washington, D. C.
 J. F. Hartigan, Washington, D. C.
 M. P. Hatfield, Chicago, Ill.
 Morris H. Henry, New York City.
 F. C. Hotz, Chicago, Ill.
 J. L. Hillmantel, Chicago, Ill.
 Hunter H. Howell, Cleveland, Ohio.
 E. Fletcher Ingals, Chicago, Ill.
 D. B. Ingersoll, May's Landing, N. J.
 Samuel K. Jackson, Norfolk, Va.
 W. W. Jaggard, Chicago, Ill.
 J. F. Jenkins, Tecumseh, Mich.
 R. B. Jessup, Vincennes, Ind.
 Jos. Taber Johnson, Washington, D. C.
 A. W. Johnstone, Danville, Ky.
 George Wheeler Jones, Danville, Ill.
 Joseph Jones, New Orleans, La.
 J. H. Kellogg, Battle Creek, Mich.
 T. C. Kennedy, Shelbyville, Ind.
 Ernest F. King, Washington, D. C.
 Charles W. Kollock, Charleston, S. C.
 J. A. Larrabee, Louisville, Ky.
 Benjamin Lee, Philadelphia, Pa.
 Elmer Lee, St. Louis, Mo.
 Léon Leibowitz, Vienna, Austria.
 J. Berrien Lindsley, Nashville, Tenn.

Henry M. Lyman, Chicago, Ill.
 Ely McClellan, U. S. Army.
 Hunter McGuire, Richmond, Va.
 James J. McKone, Washington, D. C.
 Donald MacLean, Detroit, Mich.
 L. S. McMurtry, Danville, Ky.
 Henry O. Marcy, Boston, Mass.
 H. C. Markham, Independence, Iowa.
 John S. Marshall, Chicago, Ill.
 Philip Marvel, Washington, D. C.
 George O. Meade, London, England.
 A. H. Meissenbach, St. Louis, Mo.
 Geo. N. Monette, New Orleans, La.
 E. M. Moore, Rochester, N. Y.
 H. H. Mudd, St. Louis, Mo.
 J. H. Mundell, Washington, D. C.
 P. J. Murphy, Washington, D. C.
 William H. Myers, Ft. Wayne, Ind.
 A. W. Nelson, New London, Conn.
 S. N. Nelson, Boston, Mass.
 Robert Newman, New York City.
 John North, Keokuk, Iowa.
 William Osler, Philadelphia, Pa.
 Charles B. Penrose, Philadelphia, Pa.
 Max von Pettenkofer, Munich, Germany.
 H. Sterling Pomeroy, Boston, Mass.
 Miles F. Porter, Ft. Wayne, Ind.
 P. Brynberg Porter, New York City.
 William Porter, St. Louis, Mo.
 Joseph Price, Philadelphia, Pa.
 Arthur E. Prince, Jacksonville, Ill.
 Chas. W. Purdy, Chicago, Ill.
 Joseph Ransohoff, Cincinnati, Ohio.
 Chas. A. L. Reed, Cincinnati, Ohio.
 C. R. Reed, Middleport, Ohio.
 R. Harvey Reed, Mansfield, Ohio.
 W. W. Reeves, Wills Point, Tex.

Dudley S. Reynolds, Louisville, Ky.
 B. Merrill Rickets, Cincinnati, Ohio.
 Irving C. Rosse, Washington, D. C.
 W. Byford Ryan, Willow Branch, Iowa.
 J. E. Schadle, St. Paul, Minn.
 W. L. Schenck, Osage City, Kans.
 John V. Shoemaker, Philadelphia, Pa.
 Howard Smith, Charlestown, Mass.
 Jos. R. Smith, U. S. Army.
 Thomas C. Smith, Washington, D. C.
 Frederick Sohon, Washington, D. C.
 D. A. K. Steele, Chicago, Ill.
 D. R. Stubblefield, Nashville, Tenn.
 E. S. Talbot, Chicago, Ill.
 Lewis H. Taylor, Wilkesbarre, Pa.
 J. D. Thomas, Pittsburgh, Pa.
 F. Watson Todd, Stockton, Cal.
 J. M. Toner, Washington, D. C.
 Lawrence Turnbull, Philadelphia, Pa.
 W. C. Van Bibber, Baltimore, Md.
 Ely Van de Warker, Syracuse, N. Y.
 Weller Van Hook, Chicago, Ill.
 Carl H. von Klein, Dayton, Ohio.
 John P. Wall, Tampa, Fla.
 S. H. Weeks, Portland, Me.
 Edward F. Wells, Shelbyville, Ind.
 D. Emmett Welsh, Grand Rapids, Mich.
 Kent K. Wheelock, Ft. Wayne, Ind.
 H. M. Whelpley, St. Louis, Mo.
 T. J. Whitten, Nokomis, Ill.
 D. M. Wick, New Hartford, Iowa.
 William C. Wile, Danbury, Conn.
 E. A. Wood, Pittsburgh, Pa.
 John W. Wright, Columbus, Ohio.
 T. L. Wright, Bellefontaine, Ohio.
 H. B. Young, Burlington, Iowa.
 Geo. J. Ziegler, Philadelphia, Pa.

MEDICAL SOCIETIES.

Academy of Medicine of New York.
 American Academy of Medicine.
 American Ophthalmological Society.
 American Otological Society.
 American Surgical Association.
 British Medical Association.
 Chicago Medico-Legal Society.
 Congress of American Physicians and Surgeons.
 Gynæcological Society of Boston.
 Gynæcological Society of Chicago.
 Massachusetts Medical Society.

Medical Society of the District of Columbia.
 Medical Society of Virginia.
 National Convention of Charities and Corrections.
 New York County Medical Association.
 New York State Medical Association.
 New York State Medical Association—Fifth District Branch.
 Obstetrical Society of Philadelphia.
 Philadelphia County Medical Society.
 Suffolk District Medical Society.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, JULY 7, 1888.

NO. 1.

ORIGINAL ARTICLES.

INTESTINAL OBSTRUCTION IN ITS SURGICAL ASPECT.

*Read in the Section on Surgery at the Thirty-ninth Annual Meeting
of the American Medical Association, Cincinnati, Ohio,
May 8-11, 1888.*

BY R. HARVEY REED, M.D.,
OF MANSFIELD, OHIO.

In the study of "intestinal obstruction," we shall endeavor to confine ourselves, as far as possible, to the consideration of two general conditions.

1. Pseudo-obstruction.
2. Veracious obstruction.

By pseudo-obstruction of the intestinal tract, we mean a paralytic condition, presenting the symptoms of a real obstruction without any such obstruction existing, either ante-mortem or post-mortem.

By veracious obstruction, we mean a literal obstruction of the intestinal canal capable of verification, either ante-mortem or post-mortem.

To prove that these two general conditions do exist, both *ante-mortem* and *post-mortem*, will be the aim of the author, in this paper, by the collection of a few cases, and so far as possible demonstrating the above propositions by actual specimens.

PSEUDO-OBSTRUCTION.

In November, 1883, I was called to see Mr. M., a strong, muscular, contractor, who had reached about middle age, but had always been, and was at the time he was taken sick, an unusually robust, active fellow. After arriving at his bedside, I learned that three days previous, he was taken suddenly ill with a "severe pain in the right side" as they called it, but which in reality, was in the iliac fossa. I also learned that he had had a physician who diagnosed some "liver trouble."

When I reached him, which was only two or three hours prior to his death, I found him complaining of excruciating pain in the right iliac fossa. Extremities were cold; abdomen very much distended, and tender over the whole lower and right side; stercoraceous vomiting and extreme constipation; bowels had not moved at all

subsequent to his illness, notwithstanding repeated efforts with drugs and by enemata.

A careful examination failed to discover any localized enlargement, which, had it existed, would have been difficult of detection, owing to the great distention of the abdomen, and the pain and tenderness.

I did not feel clear in my diagnosis, but ventured to tell the friends that in my opinion the whole difficulty was located at some point in the intestinal tract, near the right iliac fossa, but owing to his rapidly increasing collapse (at the time of my first and only visit), all efforts at relief were certainly useless.

A post-mortem examination was made eight hours after death, in the presence of a number of physicians, of Mansfield, O., which revealed an acute typhlitis with perforation, peritonitis, and death. I also found a very high degree of acute congestion of both lungs, which were almost one mass of blood.

There was no real obstruction of any kind in the intestinal tract, the lumen of the entire bowel being free from one end to the other, notwithstanding he had had all the ordinary symptoms of acute obstruction, followed with perforation and peritonitis of a violent type.

In April, 1885, I was called in counsel on a case, which I reported to this Association at its thirty-seventh annual meeting, under the title of "Some of the Complications of Strangulated Hernia," which aids us in demonstrating the fact that we do occasionally have pseudo-obstruction, with all the symptoms of true obstruction of the intestinal tract. With your forbearance I will briefly mention this interesting case in that connection.

The case occurred in a young man of 30 years, with a vigorous constitution, and a fully developed muscular system, who had not only had a hydrocele, but also a complete inguinal hernia on the right side; the former I tapped, and the latter was reduced with little or no difficulty. I found, however, that the symptoms of intestinal obstruction continued, with all the horrors of stercoraceous vomiting and complete constipation, which after repeated consultations, led to the opinion that some form of intestinal obstruction existed, and must be relieved by surgical interference, or death would surely result.

My friend, Dr. J. W. Craig, who had been called in council on the case, performed the laparotomy, assisted by myself, his son, Drs. J. H. Craig and George P. Sattler, which revealed the fact that the "ascending colon had been dragged down farther than usual, until the lower end of the vermiform appendix had escaped through the femoral ring and became strangulated at a point where it passed Gimbernat's ligament. When released it was found to be swollen to the size of a man's thumb, and very much discolored."

No obstruction whatever was found to exist in the intestinal tract proper, notwithstanding the persistent vomiting of fecal matter for four days prior to the operation, and our inability to get a motion from the bowels by either copious enema or legitimate medication.

The intestines were cleansed with a 1 to 3,000 bichloride solution and returned, and the abdominal wound closed; the patient recovering without a single bad symptom, and has been well as usual ever since, the author having seen him only a few weeks ago. In April, 1887, I was called in council with Dr. Jeffries, of Greenwich, Ohio, in the case of a vigorous young man of 17 years, who was suddenly taken ill about four days before with vomiting and a severe pain in the stomach, with no history of a chill. The attending physician, Dr. Jeffries, reported a pulse of 70, not associated with any fever; patient was given a dose of oil, without any results; said he complained of severe pain in the ileo-cæcal region, with tenderness on pressure, which extended more or less over the entire abdomen; could not lie on his left side; persistent constipation, notwithstanding he was given copious injections of warm water; pulse becoming weak and thready, and pain increasing with abdominal distention. The diagnosis of typhilitis was made, and owing to the alarming symptoms Dr. Sykes and son, of Plymouth, were sent for, who, after examination, confirmed the above diagnosis.

On the afternoon of the fourth day of his illness, the author was sent for, arriving there in the evening, and found the patient vomiting fecal matter, and in a state of apparent collapse, with all the symptoms of acute intestinal obstruction, with perforation, and peritonitis. After receiving the above brief history, and making a careful physical examination, I formed the opinion that he had an obstruction in the region of the ileo-cæcal valve, and suggested the advisability of an operation for his relief, had the case been seen in time; but that owing to his collapsed condition, I did not think an attempt at surgical relief advisable at the present time, as I thought he could not certainly survive over a few hours at most.

To our surprise, however, he lived through the night, and the following morning had rallied considerably; pulse was stronger and extremities

warmer. He begged piteously for an operation, as did his friends, saying that he couldn't *more* than die, and if it gave him the only chance for recovery, he wanted that chance even if he should die in the attempt.

With no small degree of hesitancy, I prepared for the operation, which I feared would be not only useless under the circumstances, but in all probability fatal. Dr. Jeffries gave him the anæsthetic which he took with little or no trouble. The abdomen was carefully cleansed with a 1:3000 solution of the bichloride of mercury.

An incision was made in the median line, midway between the umbilicus and the pubes, carefully directing up with a grooved director the various layers until we reached the peritoneum.

During this period I observed the pulse at times becoming irregular, and the breathing spasmodic, notwithstanding he had been given stimulants and digitalis by hypodermic injections prior to the operation; yet I determined to go on, as I was still firmly of the belief that what I had commenced as an operation would end as a post-mortem. No sooner had I opened the peritoneum, than he collapsed, a few gasps, a slight tremor of the pulse, and the post-mortem was at hand.

Having already arranged for that with his friends, I proceeded at once with the autopsy, which revealed extensive peritonitis with immense exudations of lymph, which had glued the bowels together almost their entire length, and at the same time, pasted them firmly to the peritoneum. A diligent search and careful examination failed to discover the least obstruction to the intestinal tract, the lumen of the bowel being free and open from one end to the other.

In the vermiform appendix, however, was found a calculus about the size of a hazel-nut, in which was a nucleus which I am inclined to believe is a small gall-stone, around which the calcareous laminae have gathered until the concretion became so large, and produced so much irritation as to ulcerate through the appendix, and allow extravasation into the peritoneal cavity with all its fatal results.

You will observe by examining the specimen, which I shall pass around, that there is a distinct nucleus, and from the laminated character of the calculus we are inclined to the opinion that it was of slow formation. By examining the vermiform appendix and the lower end of the cæcum, which I will also pass around for examination, you will observe the appendix is enlarged to more than ten times its normal size. The bulged appearance just below the end of the cæcum is where I found the calculus imbedded, while a little lower down, you will observe the small opening into the peritoneal cavity. The cæcum, ileo-cæcal valve, colon, and small intestines, were all normal with the exception of the inflammatory products above referred to.

REMARKS.—In each of the above cases we had all the ordinary symptoms of intestinal obstruction, such as a sudden attack with localized pain, constipation with a desire to go to stool, which was followed with no results; stercoraceous vomiting, tympanitis, and in the two cases which were not relieved by surgical interference, collapse, and death, and yet in not a single case was there any real obstruction existing in the intestinal tract proper.

Morris, in Vol. V of the "International Encyclopædia of Surgery," page 993, refers to a few cases of foreign bodies in the appendix vermiformis, and speaks of the symptoms "simulating hernia" and "being suggestive of intestinal obstruction," which, to a certain extent, confirms the proposition we have taken, that we do have pseudo-intestinal obstruction, or, rather we have affections of the vermiform appendix, giving rise to a series of symptoms so clearly allied to those of true obstruction of the intestines, that it is with great difficulty, if at all, we are able to diagnose during life, without an exploratory incision into the abdominal cavity, between the true and false obstruction occurring along the intestinal tract.

In this class of cases we undoubtedly have a localized paralysis of the muscular walls of the intestine arresting the peristaltic action of the bowel, and thus forming "a block" as it were, to the free movement of its contents, which for the time being, acts as an obstruction even in cases in which the intestine is only partially filled with fecal matter, the walls of which lose their elasticity and collapse, and thus we can account for the stercoraceous vomiting occurring in these cases, as well as the extreme constipation.

The difficulty of diagnosing between these cases, and those of complete veracious obstruction is at once apparent. In both there are localized pain and tenderness; in both, stercoraceous vomiting; in both, extreme constipation; in both you may have peritonitis with collapse and death.

In pseudo-obstruction, however, we usually find the symptoms of inflammation preceding those of obstruction, while in veracious obstruction you usually have the symptoms of obstruction preceding those of inflammation.

In pseudo obstruction, we usually find localized pain without any distinct tumor, whilst in veracious obstruction, we usually find a distinct tumor in addition to the localized pain.

If the intestine is inflated by hydrogen gas as devised by Prof. Senn,¹ of Milwaukee, in the pseudo form of obstruction, there will be no difficulty in obtaining a free passage through the entire bowel, and obtain the gas from the stomach by means of a stomach tube; whilst in complete

veracious obstruction this will not only be impossible, but the intestine will be found to inflate to the point of obstruction and no farther. If, on the other hand, we have pseudo-obstruction, the result of a peritonitis from perforation, this most admirable method of gaseous inflation, devised by Prof. Senn, will at once enable us to diagnose this fact.

By the use of the hydrogen gas *per rectum*, it will be found that by puncturing the abdominal walls with an exploring trocar, being exceedingly careful not to puncture the bowel, that if there is a perforation of the bowel, the gas will escape through the trocar, and be easily ignited, which would not be the case if there is no perforation.

VERACIOUS OBSTRUCTION.

The frequency of true obstruction of the intestinal tract, and the dangers it subjects its victims to, are of such grave importance as to demand of the surgeon the most careful study of this vitally important question. That these obstructions, of whatever class, are of a mechanical nature is without question, and that they can be relieved by proper surgical assistance in a large majority of cases if taken in time, is also just as true.

It is to be lamented that we still have physicians of unquestioned skill who advocate the old opium and purgative plan of expectant treatment of these obstructions, and discourage the use of the knife except as the last resort, when the patient is exhausted by days of excruciating pain, or on the verge of fatal collapse from purulent peritonitis, or dying from the shock and inflammation incident to a perforation of the bowel, and then they condemn operative interference as useless and barbarous because it fails to save the life of one who is practically moribund before the surgeon is allowed to operate. It is true they have a case now and then when there is complete intestinal obstruction in which nature has stepped in and did the surgery for them and saved their patient.

In this connection I desire to report a case that not only shows what nature *will* do, but which at the same time demonstrates the principles we shall advocate for the prompt repair of intestinal obstruction, with possibly a few modifications on nature's original plan.

About the middle of May, 1886, the author was called in council with Dr. George P. Sattler, of Pavonia, Ohio, in the case of Mrs. H., who had been suffering from intestinal obstruction for six days prior to my visit. From the Doctor and the family I learned that on the night of the 12th of May she was seized with "pain in the epigastric and umbilical regions," which was of a paroxysmal character, which steadily increased in severity, and was soon followed with vomiting, without any motion of the bowels.

The patient informed me she had been engaged the day before putting up an ash-leach, and had

¹The particulars as to this method of diagnosis have been kindly given me by Prof. Senn, of Milwaukee, who will furnish this Association all the details of his method of diagnosis in perforation of the bowel in a paper already prepared for this section.

been lifting bucketfuls of ashes nearly as high as her head, but felt no inconvenience from it, excepting when she was in the act of lifting one bucketful she felt a little pain in her side, as she expressed it, and supposed she had wrenched herself, but paid no further attention to it and went on with her work.

Dr. Sattler informed me that "there was at no time any localized tenderness, pain, or swelling," but that on the fourth day "general peritonitis" had set in, which "was accompanied by stercoraceous vomiting and occlusion of the bowels," which he located "somewhere in the lower half of the ileum."

After a careful examination of the case I advised an operation; although at my visit I found so much tenderness and tympanites that I could not locate the point of obstruction, yet I felt morally certain it existed, and considered an operation the right thing to do. There being some hesitancy on the part of the friends, as well as the Doctor, as to an operation, we left with the understanding that they would make another effort at moving the bowels and if that failed they would consider the advisability of an operation.

After diligent efforts at removing the obstruction for three days more without success, they called Dr. J. W. Craig, of Mansfield, O., to see her in consultation with the family physician, who advised making "another effort to overcome the obstruction by medication, and if that did not have the desired effect to operate within twenty-four hours."

A few hours later, however, some fecal matter was passed, *per rectum*, "during a violent fit of vomiting," and "from that time forward her condition gradually improved." "On the 20th day of her illness, while in the act of defecation, she passed a section of the ileum about 6 or 8 inches in length," which "when first seen was still telescoped."

I am indebted to Dr. Sattler for this specimen, which I have the pleasure of showing you to-day, as well as the general history and report of this interesting case. You will observe that a portion of the mesentery was passed with the intestine, which is attached to the latter in numerous places by bands of adhesions, while the ends of the intestine are oblique and present a ragged and tattered appearance.

The patient gradually improved and is still living, but never regained her usual degree of health. In June, of the same year, Dr. Sattler had a similar case of intestinal obstruction in a male, aged 65 years, who, after twenty days of intense suffering with stercoraceous vomiting and constipation, was relieved by passing a portion of the bowel, which came away in shreds, one of which the Doctor procured and has kindly given me for exhibition at this meeting, but which has become so contracted from being in alcohol, which finally

evaporated and allowed the specimen to dry up in the manner you see it at present.

In these two cases of veracious obstruction of the intestinal tract we have an example of what nature will occasionally do when not relieved by art, and at the same time we have a practical demonstration of the principles of Prof. Senn's method of uniting the ends of an intestine by the rubber-ring method.

In these cases the intussusceptum undoubtedly acted the part of the rubber ring to the intussusciens by becoming swollen, and in this way holding the two serous surfaces together until union took place, when the lower portion of the intussusceptum became gangrenous and sloughed off and was passed just as the rubber ring is—*per rectum*.

It is true there should be a liberal degree of conservatism practiced in all these cases before laparotomy is resorted to, and all possible complications carefully studied and their importance duly considered. I was forcibly impressed with this idea of conservatism a few days ago while assisting in a post-mortem examination on an old man who had died of carcinoma of the liver, which during his lifetime had had marked symptoms of obstruction of the bowel.

His attending physician, Dr. J. S. Stewart, of Ontario, O., informed me he had diagnosticated obstruction located on the right side at the juncture of the ascending and transverse colon, some months prior to his death which he was inclined to think came from impaction of the feces, and which, after a few days, was relieved, although he frequently complained of pain in that region.

The post-mortem examination revealed a cancerous liver, which had become so enlarged as to reach almost to the iliac fossa on the right side, and more than half way to the iliac fossa on the left side, pushing before it the transverse colon, producing an U-shaped condition of the colon, with an acute angle on the right side and a sub-acute angle on the left side. On the right side that portion of the transverse colon which was pushed down parallel to the ascending colon was completely adherent to the latter for about 8 inches, making in all 16 inches. It was at the acute angle where the temporary obstruction was lodged, no doubt producing the inflammation and adhesion found at the autopsy.

I recognize in this case, which at the time of the obstruction was not suspected of having a cancerous liver, a mechanical condition producing obstruction in which little benefit could occur from operative interference, as it would have required the switching off of at least 16 to 18 inches of the colon by Prof. Senn's decalcified bone plate operation, which in a patient of over 70 years of age, with more or less of a devitalized condition, would have certainly proved fatal, saying nothing of the enlargement of the liver.

On the other hand I have a specimen I obtained at a post-mortem examination I held on Mr. E. P., age 72 years, in which I was assisted by Dr. J. Harvey Craig, of Mansfield, O., which you will observe is an old, irreducible inguinal hernia, in which the sac has become enormously thickened and attached in many places to the loop of intestine, which is so constructed at the neck of the sac as to have materially impaired the circulation of the contents of the intestine, which at different times threatened obstruction, but which happily passed off without any serious results.

Here is a case in which the ordinary operation for the radical cure of hernia would have been attended with great danger if it had not proved a complete failure altogether, owing to the numerous adhesions; yet it would have been a suitable case for the Senn decalcified bone-plate operation, and thus have sidetracked the loop of intestine contained in the hernial sac, and allowed it to have undergone physiological atrophy. Permit me to say, that the subject from which this specimen was taken died from a disease in no way connected with this old hernia.

CONCLUSIONS.

From a study of these few cases that have come under my personal observation, in their relation to intestinal obstruction, I have come to the following conclusions:

A.—1. That we do have pseudo-obstruction of the intestinal tract in which all the symptoms of true intestinal obstruction exist, without any real obstruction being present.

2. That all these cases will result fatally if not relieved.

3. That surgical interference is not only the rational, but the safest and surest means of relief.

B.—1. That in veracious obstruction of the intestinal tract we may have spontaneous recovery in rare instances, attended with painful, prolonged, and dangerous illness.

2. That there are occasionally circumstances occurring where there is mechanical obstruction with certain complications in which operative interference would be useless, and not only hazard the life of the patient, but undoubtedly shorten his days.

3. That there are mechanical obstructions of the intestinal tract that cannot be relieved except by surgical interference.

The author would recommend an operation at the earliest possible moment after the diagnosis of intestinal obstruction is made, in the firm belief that delays are not only dangerous, but hazardous, in the majority of cases.

As to the methods of operation, I would recommend the rubber ring, modification of Jobart's method, devised by Prof Senn, of Milwaukee, as the safest where it is necessary to make a resection or excision of a portion of the intestinal tract.

And where an excision is not necessary (and under certain conditions where excision is necessary) the decalcified bone-plate method as devised by Prof. Senn, is advised, by which a portion of the intestine can be "switched off," as it were, by opening a new channel between the upper and lower portion of the bowel and thus allow the "sidetracked" portion of the intestine to atrophy from disuse, while the contents of the bowel proceeds on its way through the artificial opening.

In purulent peritonitis, with pseudo-obstruction of the bowel, the opening and washing out of the abdominal cavity is unquestionably the proper thing to do, while in the same condition from veracious obstruction it is imperative in connection with the removal of the obstruction proper.

In all operations in the abdominal cavity we would recommend the strictest antiseptic precautions, which combined with the earliest operative interference possible in cases of intestinal obstruction, and the improved methods of operating, as devised by Prof. Senn, we are of the firm conviction that the mortality in this class of cases can be very decidedly diminished.

May 3, 1888.

THE NERVOUS RECTUM.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May 8, 1888.

BY WILLIAM GOODELL, A.M., M.D.,

PROFESSOR OF GYNECOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

Hysteria is closely allied to insanity, and as the latter frequently manifests itself by a single delusion, while the mind remains clear on all other subjects; so hysteria often exhibits itself chiefly by some localized disorder. It then explodes externally and billets itself on certain muscles or on certain sets of muscles, forming, as it were, a sort of muscular insanity. The mind is sane, the organic body is sound, the individual, as a whole, is above reproach, and yet these muscles will behave as if they were bereft of reason. Few muscles are exempt from the attacks of hysteria, and thus are formed hysterical paresis and anaesthesia, hysterical aches and jerks, and those hysterical grimaces of expression or of locomotion with which all of us are familiar.

The muscles most liable to become hysterical are, perhaps, the circular ones, viz., the sphincters of outlets or inlets, and while the insanity, so to speak, is more localized, the sufferings are perhaps greater. Thus by a lack of nerve coördination in single muscles of this kind come irritable bladder, painful coition, asthma or dyspnoea, loss of voice, vomiting or regurgitation of food, difficulty in swallowing, dysmenorrhoea and palpitations of the heart. Much might be said on all these subjects, for the field is a wide one; but I

shall restrict myself to-day to the consideration of the hysterical rectum.

In this form of hysteria there are usually present, in my experience, some one of the protean symptoms of general nerve prostration, such as spineaches and backaches, sore ovaries, weariness, wakefulness and nervousness. But the chief suffering, or the most exacting symptom, is referred to some portion of the rectal tract, leading the physician to suppose that he is dealing with some coarse or traumatic lesion. When leading nerve-symptoms are absent it is not always easy to unmask these nerve counterfeits of rectal disease. But the careful observer will note an irregularity of pain in the hysterical affection, an indescribable affectation of suffering, and a lack of consistency in the behavior of the symptoms.

In one form of hysteria localized in the rectum, spasm of the sphincter takes place, and the nerves are so acutely sensitive that the symptoms mimic those of an anal fissure. The act of defecation then gives great suffering, followed by a painful throbbing which may last for hours. Patients thus afflicted so dread the suffering that they school themselves into habits of costiveness, and often become victims to opium eating. Sometimes the site of the rectal pain lies higher up than the sphincter muscle, and is irrespective of the act of defecation. It then is liable to show periodicity in its character, coming on at regular hours of the day, probably from the periodicity with which the accumulation of feces in the lower bowel takes place. Another form is a throbbing and pulsating pain while the rectum is loaded, and a sickening pain during defecation. These two last forms of rectal suffering are often, although not always, dependent on prolapsed and tender ovaries, over which the hardened feces grate. In one of my cases an opium-eater, reduced to the last degree of weakness and emaciation, being in fact merely a bundle of skin and bones, rectal enemata, or the presence merely of feces, kindled up sexual throbs of the most painful and exhausting character, which thrilled through the whole body for hours at a time. She was cured by the removal of the tubes and of the ovaries, which were diseased. A neurotic coccyx, causing coccygodynia, will evoke some of the foregoing symptoms; but the diagnosis can be readily made by introducing the index finger into the anus and by placing the thumb on the coccyx, where that bone can be grasped between them and moved to and fro.

All the preceding forms of the nervous rectum are associated with pain; but there are sheer hysterical ones, which are by no means uncommon, and in which the rectum behaves as if it had wholly lost its wits. In some women the sphincter ani becomes so strong by unnatural exercise, and is so powerfully contracted by tonic spasm, that despite the most active cathartic, this last

muscular barrier cannot be overcome unless an enema be given, or unless the finger be passed into the vagina, hooked over the sphincter and pulled strongly downwards. This adds to the *vis a tergo* and everts the anus. One of my patients who has lately had a relapse, although her sphincter ani has been cut by another surgeon and over-stretched by myself, describes the spasm of this muscle as a "ring of iron," through which she can barely insert the smallest nozzle of a syringe. I have repeatedly met with cases in which stricture of the rectum was so exactly counterfeited that the feces were expelled either in the form of thin flat ribbons, or in small round pellets like the dung of sheep or of goats.

In many women the act of defecation is not accompanied by pain, or by any local inconvenience whatever, the function being perfectly natural. Yet there will follow it great exhaustion, sometimes amounting in degree to a collapse, from which it will take hours for the patient to recover. The pranks which a nervous rectum will sometimes play are amusing and yet very annoying. I know of a lady who is actually kept a close prisoner by an apparently very jealous rectum. At home and in indoor dress, this lady is well and at ease. But if she dresses to go out, her rectum begins to grumble audibly, and, just as soon as her hat is put on, it starts up painful tenesmus and repeated stools, which do not cease until she uncovers her head and resumes her household duties. One lady could not get her bowels moved unless she stood erect, and the inconvenience of such a posture was of course very great. Being practically bed-ridden from nerve-prostration and from neuralgic and prolapsed ovaries, she was sent to me to have oöphorectomy performed on her. But by massage, electricity and rest she became well and is now, as she lately wrote, able to dance all night and take a walk of three miles the next day. A lady, who was under my care for nerve prostration, could not receive a letter from her husband without having so urgent desire to go to stool, that she had to postpone reading it until she had first responded to the rectal call.

One of my patients was compelled to go to the water-closet whenever a visitor was announced. Another one was affected in like manner upon any emotional excitement. For instance, when Garfield died, the report reached our large cities shortly after midnight, and was cried out in the streets by the policemen and watchmen on duty at that hour. The news thus conveyed awakened my patient out of a sound sleep, with the result that she had an involuntary evacuation and soiled her bed. In some cases the rectum is so irritable that urgent tenesmus is at once aroused, as soon as the feces descend low enough to enter it. This causes repeated and sudden evacuations, which are usually painful, and always unseasonable.

These cases cannot use enemata of any kind, for either the entrance of the nozzle gives too much pain to be borne, or the fluid, as fast as it is injected is forced out along the sides of the nozzle. In other cases the rectum is too emotional, and the lady is obliged to forego all social pleasures on account of rectal tenesmus produced by any kind of excitement, which either causes the escape of wind or creates an uncontrollable desire to evacuate the bowels. These annoyances make them very morbid on the subject, and they think and talk of hardly anything else.

There is yet another form of disease, which I think may be classified under the general heading of nervous rectum, although its pathology is by no means yet fully determined. I refer to pellicular colitis, or pseudo-membranous enteritis, as it is usually termed, in which mucous casts of the lower bowel are discharged with much tenesmus and abdominal pain, either by themselves or in the regular evacuations. I have repeatedly met with this form of intestinal trouble, and I have so invariably found it in hypochondriacal or in hysterical patients that I am disposed to look upon it as a sheer neurosis. That is to say, it is as much a nervous affection as shingles, pruritus, urticaria and other eruptions or cutaneous manifestations of disordered innervation. Patients who have this affection are perpetually talking about it, perpetually examining their evacuations, and are prone to search for and save the membranous casts for the inspection of their friends or of their physician. Nor have I ever seen this disease among the ignorant and the unrefined. It is, in my experience, a disease peculiar to well educated and emotional women of high intelligence, who have some degree of nerve-prostration.

The treatment of a nervous rectum depends largely upon the general condition of the patient. If she have nerve-prostration, as she usually will, failure will attend every effort to cure the rectal disorder, unless the former is successfully treated. The very best general treatment for this condition of the nervous system is that devised by Weir Mitchell, which I have described in detail in the last (3rd) edition of my "Lessons in Gynecology," under the heading of "The Nerve-Counterfeits of Uterine Disease." It consists of prolonged rest in bed, of seclusion from friends, of nutrition, of massage and of electricity. The therapeutic advantages of the first three agents are self-evident, and they need no explanation. But the last two are equally important. They pleasantly stimulate into action the vaso-motor nerves, and the terminal filaments of cutaneous nerves. They also exercise the muscles without volition on the part of the patient, and, therefore, without expenditure of nerve force. Now this is a very important item in the treatment, for all voluntary muscle-work is nerve-work, and the

nerve-capital in these cases is too small to be drawn upon. Percussion, made by quick strokes with the ulnar margin of the palm of the hand, or with a wet towel, or with two rubber balls mounted on whalebone stems, temporarily stuns the nerves; and these surprises effects molecular changes, by which lax fibre and tissues of loose consistency are strengthened. Again, both massage and electricity raise the body temperature, stimulate the nervous system, promote the secretions and increase the peristaltic action of the bowels. Also, the new and sharp impressions of electricity intrude upon and break up the mental attitude of morbid concentration on the pseudo-neuralgic pains of the rectum, and on its embarrassing eccentricities.

Thus these two agents not only act as antidotes to the evils which come of prolonged rest, but they meet several important indications. Further, as in these cases of nerve prostration there is disturbed circulation as well as enfeebled and disturbed innervation, it follows that, when a pathological process is set up by an increased flux of blood or flux of nerve fluid to an organ, whatever tends to lessen the amount of this overflow tends to restore that organ to health. Now, both electricity and massage increase surface circulation in the large vascular district of the skin; they flush its shallow arterioles. Again, by irritation of vaso-motor nerves, they also produce reflex changes in the circulation and in the innervation of deeper parts. But increased capacity in one vascular district causes lessened capacity in another. Hence the flux of blood and of nerve fluid is diverted from the congested organ, viz.: the rectum, and the amount of its circulation is lessened to a great degree. In all my cases, the interrupted current was most commonly used, the galvanic current being reserved for stubborn and deep-seated pelvic pains. It is interesting to watch how very surely, under this treatment, the rectal pain or other nerve pain is slowly extinguished.

But, in addition to the foregoing constitutional treatment, the rectal trouble itself needs supervision and special attention. When the patient complains of great exhaustion after a movement of the bowels, it is well to manage it so as to get the bowels opened just before bedtime. This can be accomplished either by an enema given an hour before bedtime, or by laxatives taken late in the day. In this way, the exhaustion being repaired by sleep and by a whole night's rest, the patient wakes up the next morning refreshed, and keeps refreshed until evening. A full dose of a bromide, or a stimulant, taken shortly before the bowels act, will also answer very well. Sometimes the exhaustion is best met by the use of the bed-pan, by which the recumbent posture is maintained, and the equable circulation of the blood is not interfered with. Of course, as the patient im-

proves in health and strength, this symptom gradually disappears. When the nerve symptoms counterfeit those of anal fissure, they are to be treated in precisely the same way as the latter. Suppositories of iodoform or of antipyrin will be found of benefit; but, these failing, the best treatment is that of overstretching the sphincter ani. This operation is usually followed by a permanent cure; but sometimes, after a few months' absence, the pain will return and the muscle will again have to be stretched. These relapses do not occur unless the patient's general health has not been greatly benefited or it has deteriorated. I have occasionally resorted to an analogous operation, whenever any rectal pain was complained of, or when the spasm of the sphincter ani was so strong as to make a movement of the bowels difficult. In these cases I have usually found the sphincter muscle so well developed by its unnatural exercise, that all my strength was needed to overcome its resistance.

With regard to pellicular colitis, or pseudo-membranous enteritis, I know nothing that will cure it, unless the general neurosis or nerve prostration is overcome. There are, however, local remedies which soothe the rectum, mitigate the suffering and lessen the amount of the secretion of false membrane. Suppositories of iodoform, of belladonna and antipyrin generally act well. Injections of broth, of hot water, of thin starch, of flaxseed tea, and of weak solutions of potassium chlorate or of witch hazel, will do good. I have obtained benefit by a clyster of 2 or 3 ozs. of undiluted limewater, or of the same quantity of Carrom oil. The painful tenesmus often accompanying this disease can generally be overcome by stretching the sphincter muscle. Of course opium soothes above all other drugs, and the temptation to use it is great. But it should be scrupulously avoided, as all such cases are liable to become opium eaters.

The best medicines for a nervous rectum are not those which regard especially the local trouble, but those which, being constitutional in their action, reach the general nerve prostration. My favorite pill is one made by Bullock & Crenshaw, and labelled by them *Pil. Sumbul Comp.* I prescribe many thousands every year. It consists of one-fortieth of a grain of arsenious acid, one grain each of dried iron sulphate and extract of sumbul, and two grains of asafetida. Since it contains asafetida, it should be sugar-coated. For the first few days the patient tastes this drug, but usually she very soon ceases to regard it. The chalybeate pill, or Bland's pill, so highly extolled by Niemeyer, is an excellent method of conveying large quantities of iron into the system. During the first three days, one pill is to be taken after each meal. On the fourth day four pills are taken, viz.: two after breakfast, one after dinner, and one after supper. On the fifth day, five pills; on the sixth day, six—that is to say, two pills

after each meal. For three days more, six pills are taken daily; then the dose is to be increased by one pill daily, until three pills are taken after each meal. On this final dose the patient is kept for three or four weeks, or even longer, and then the number of pills is lessened by one every day until one pill is reached, when it is discontinued. In stubborn cases I have occasionally run up the dose to five pills thrice daily, and have seen no other bad effects from it than a tendency to constipation and a feeling of fulness in the head.

Two other pills have done me such good service that I will mention them: The one is called "the pill of three valerianates," and it contains one grain each of the valerianates of zinc, iron and quinia. The other pill consists of one-eighth of a grain of the chloride of gold and sodium, two grains of zinc valerianate and one grain of extract of hyoscyamus. These pills should be given whenever the nervous symptoms predominate largely over all others, and when the general health is otherwise in a fair condition.

Whenever malaria complicates the case I am very fond of giving a mixture containing one part of Fowler's solution of arsenic to nine of the syrup of iodide of iron. As a chemical decomposition is liable to take place, forming an arseniate of iron which precipitates, this mixture should be well shaken before it is taken. Of this ten drops, in a sufficient quantity of water, are given after each meal on the first day; eleven drops after each meal on the second day; twelve drops after each meal on the third day; and so on until, on the twentieth day, thirty drops after each meal are reached. The medicine is now kept up for a week or two at thirty drops after each meal. The dose is then lessened by one drop, in precisely the same way that it was increased, until ten drops are again reached, when the medicine is discontinued. For strict uniformity in the size of the drops, a dropper should be used. The only objection to this mixture is its liability to precipitate, and also to discolor the teeth temporarily, but it does not injure them like the tincture of ferric chloride.

Of course the bromides are very often needed, for, apart from their soothing properties, they seem to divert the blood from the pelvic organs and to lessen congestion. If continued for any length of time, it is well to combine them with a bitter tonic, such as the compound tincture of gentian. This serves to antagonize their depressing effect.

For sudden paroxysms of rectal pain, or for other nervous outbreaks associated with a hysterical rectum, I know of nothing so effectual as antipyrin in five- or ten-grain doses, or the hydrobromate of hyoscin in doses of one-one hundred and twenty-eighth of a grain—viz.: grain $\frac{1}{128}$. They should be given by the mouth every two hours until either the pain is relieved, or the characteristic symptoms of each drug are exhibited.

Whenever these sufferers are so situated that they cannot afford time for the rest-treatment, or the expense of it, I compromise the matter by making them go alone into a darkened room, and take a rest of one or two hours every day. This repose of body and of mind should be absolute, and it must therefore be so timed as to be free from all interruption.

A CASE OF TYPHLOITIS, WITH DOUBLE PERFORATION OF THE CÆCUM, AND PERITONITIS.

IN WHICH LAPAROTOMY AND SUTURE OF THE GUT WERE FOLLOWED BY RECOVERY.

Read in the Section on Surgery at Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY L. S. McMURTRY, A.M., M.D.,
OF DANVILLE, KY.

FORMERLY PROFESSOR OF ANATOMY IN THE KENTUCKY SCHOOL OF MEDICINE, ETC.

On the evening of Thursday, January 26, 1888, I was summoned by telegraph to Somerset, Ky., to meet Drs. George Perkins and I. S. Warren, of that town, in consultation. Going by a night train, I joined Drs. Perkins, Warren, and Owens, Sr., at the bedside of the patient at 8 o'clock on the morning of the following day, the 27th.

The patient was a well-known young physician, Dr. J. L. Owens, of Somerset, and I reproduce the history of his illness up to the time of my first visit in Dr. Perkins' own words: "For several months prior to the illness of Dr. J. L. Owens he had been subject to occasional attacks of colic. These attacks were not very severe, would occur without warning, were of short duration, and were frequently attended with nausea and vomiting. They were attributed to indigestion. On January 10 I was first called to see him, and found him suffering intensely with pain referred to the right iliac region. He had already taken $\frac{1}{2}$ -gr. of morphia hypodermatically without relief, and his wife was, by his direction, administering chloroform when I entered the room. The severity of the pain, with its locality, excited my suspicions of renal colic, which opinion was confirmed by Drs. Warren and Owens, Sr., who joined me soon after my arrival. This opinion was still further confirmed later by intense reflex pain in the head of the penis.¹ By the liberal use of morphia, aided with occasional inhalation of chloroform, relief was secured.

"For three or four days following, an occasional dose of morphia sufficed to keep the patient comfortable. As soon as possible the morphia was discontinued, and laxatives were administered for

relief of the constipation which existed. On January 18 there was increased soreness in the iliac region. On January 23 I first detected by the touch a slight induration there. This induration was almond-shaped and in the line of the ureter. Immediately over it could be elicited dullness on percussion, but not flatness. A diagnosis of renal colic having been entertained, this was supposed to be impaction of the ureter. This induration continued with gradual enlargement, until it became an oblong sausage-shaped tumor in the right iliac fossa. Pain required occasional doses of morphia, and there was moderate febrile movement. On the evening of the 26th hæmorrhage from the bowels began, the patient passing about 32 ozs. of blood. Hiccough was added to the other symptoms, which, with increased frequency of the pulse, tympanites and serous vomiting, established the diagnosis of cæcal or pericæcal inflammation. On the morning of the 27th increased frequency of the pulse, cold extremities and perspiration were interpreted as symptoms of perforation and impending collapse. In solving the problem of intra-abdominal disease in this case I think we were greatly aided by the sparing administration of opium, thereby avoiding the obscuration of symptoms."

When I saw the patient on Friday morning, the 27th, the pulse was small, the surface bathed in perspiration, with frequent vomiting of green, serous fluid, characteristic of peritonitis, and bloody stools as described by Dr. Perkins. The tumor already described was distinct in outline, and readily recognized as the caput coli. In our consultation I recommended immediate section of the abdomen, which was readily acceded to by Drs. Perkins, Warren, and Owens, Sr. Our decision was communicated to the patient, who, being a competent physician, cognizant of his danger and appreciative of the advantages offered by prompt surgical interference in abdominal disease, consented without hesitation. Immediate preparations were begun for the operation. We believed we had to deal with a perforation of the appendix and consequent septic peritonitis.

At 2 o'clock Dr. Perkins anaesthetized the patient and, with the assistance of Dr. Warren, I proceeded to operate, observing thorough antiseptic precautions. The incision was $3\frac{1}{2}$ inches in length, made directly over the tumor, beginning on a line about 2 inches to the right of the umbilicus and continued obliquely in the direction of the pubes; It was afterward extended $\frac{1}{2}$ -inch toward the pubes. The superficial layers of the parietal tissues were healthy, but the deeper layers were heavily infiltrated. The parietal peritoneum and that covering the caput coli and adjacent coils of small intestine were thickened, highly injected, and exhibited flakes of recent lymph. The peritonitis was limited, but bore evidences of being recent, severe and spreading. The cæcum was

¹ Symptoms simulating those of renal colic have been frequently observed in cases of perityphlitis. See article by J. W. Elliott on "Perforative Appendicitis," in Boston Medical and Surgical Journal, Jan. 19, 1888, p. 92.

brought up through the edges of the incision and surrounded with a towel wrung out of hot carbolized water. The intestines were retained by warm sponges pressed within the wound. The vermiform appendix was found to be normal. Upon the anterior and external surfaces of the cæcum were two gangrenous perforations, one being somewhat larger than a twenty-five cent piece, the other a little larger than a ten-cent piece. These perforations were black and of well-defined circular shape. The larger perforation was complete, and allowed free exudation from within the gut. The smaller one was scarcely complete, but the tissues were rotten, and upon slight pressure allowed my little finger to slip into the cavity of the gut. The lesions were typically those of perforative peritonitis. With the scissors I trimmed off the edges of the perforations, removing the gangrenous tissue and converting them from circular to elliptical shape. The openings were then closed with silk sutures applied after Lembert's method, five sutures for the larger and three for the smaller opening. The tissues of the gut were thickened with inflammatory exudation. The sutures passed beneath the muscular coat but did not penetrate the mucous membrane. The toilette was made with scrupulous care. The diseased parts and the entire iliac fossa were carefully cleansed with warm carbolized solution (1 to 40), and a large-sized rubber drainage-tube placed deep in the iliac fossa. The wound was closed with silk sutures, dusted with iodoform, and dressed with antiseptic gauze.

Immediate improvement followed the operation. Neither vomiting nor intestinal hæmorrhage recurred. The after-treatment was conducted in accordance with the methods commended by recent clinical experience in cases of abdominal section. Within a few hours after the operation the pulse and temperature fell to almost the normal standard, and so remained, with the exception of a few hours on the third day when the pulse and temperature suddenly ran up in consequence of gastric distension. Drs. Perkins and Warren being present, promptly administered a Seidlitz powder, which was followed by a complete evacuation of the bowels with prompt relief of the unfavorable symptoms. With the exception of this interruption of a few hours, the pulse and temperature remained under 100 after the operation. The bowels were moved, as stated, on the third day, and were kept soluble throughout. Opium was used very sparingly, and when absolutely required it was given in small doses hypodermically. The drainage-tube was removed piece by piece, and was entirely withdrawn on the fourteenth day. The drainage was encouraged and facilitated throughout the after-treatment by suction of the tube, made by means of a small glass syringe, to which the tube could be closely fitted. The diet, of course, was limited to fluids and semi-solid

foods. The patient rapidly regained his strength, and is now completely restored to health and his professional work.¹ It is only just to my colleagues, Drs. Perkins and Warren, that due recognition should be made of their skill in the diagnosis of the case, their valued aid during the operation, and their services so faithfully rendered during the after-treatment.

The treatment of non-traumatic perforation of the intestine and consequent peritonitis by abdominal section is of very recent date. The first operation of this kind was reported in 1883 by Miculicz, for perforation of the vermiform appendix, with a fatal result.² In June of last year (1887) Weir was able to collect only fifteen cases in which laparotomy had been done for perforation of the intestines not due to traumatic causes. Of this number nine were cases of disease of the appendix, and all save one resulted fatally. In one no perforation was found, the peritonæum was cleansed and the patient recovered. In another an abscess was found, but no perforation, the patient recovering. To Weir's collected list should be added a successful case of abdominal section for perforation of the appendix done by Dr. Thomas G. Morton, of Philadelphia, reported by Dr. Frank Woodbury to the College of Physicians of Philadelphia, June 1, 1887; another successful case reported by Dr. J. W. Elliott in the *Boston Med. and Surg. Jour.*, of Jan. 26, 1888; and also another successful case of perforation of the appendix treated by abdominal section by Dr. Henry B. Sands, of New York, reported in the *N. Y. Medical Jour.* of February 25, making a total of twelve cases with four recoveries. Only one case of perforation of the cæcum treated by laparotomy has been recorded. This case was reported by Regnier in 1886.³ The patient was a male, æt. 16, and the symptoms were those of intestinal obstruction and peritonitis. Laparotomy was done on the fifth day, and the patient died seven hours afterward. The perforation of the cæcum was discovered at the autopsy. From this it will be seen that I have the honor to report the first successful case of abdominal section for non-traumatic perforation of the cæcum. Perforations of the cæcum are extremely rare in comparison with those of the appendix.

Under the head of typhlitis and perityphlitis all inflammatory processes in the iliac fossa involving the cæcum or vermiform appendix are included. In classifying these affections several varieties have been described by surgical writers, but for clinical purposes it is only necessary to describe them as extraperitoneal and intraperitoneal. To differentiate these inflammatory conditions is at times difficult, often impossible. When, however, the local and general symptoms of peritonitis su-

¹ The patient was here presented to the Section.

² Weir. *N. Y. Medical Record*, June 11, 1887, p. 654.

³ *Traité de Chirurgie*, de la Peritonéite. Truc, 1886, p. 57.

pervene, with the fearful evidences of perforation, as in the case here reported, the differentiation is made without great difficulty. In the extraperitoneal, perityphlitis proper, the inflammatory process has its origin in the cæcum or its appendix. Adhesions are formed between the opposing peritoneal surfaces, thus shutting off the general peritoneal cavity.⁴ Pus forms in the retroperitoneal connective tissue and, following the connective tissue plane, dissects up the anterior reflection of the peritoneum to appear with tumefaction and fluctuation above Poupart's ligament. A distinction must be observed between this class of cases and those of general septic peritonitis. In evacuating the extraperitoneal abscess the dissection must be carefully conducted with a view to avoiding peritoneal invasion by pushing aside the anterior reflection of the peritoneum. These cases of perityphlitic abscess are comparatively common. They have their origin in inflammation of the appendix or cæcum (as a rule the former), and are shut off by adhesions from the general peritoneal sac. The intraperitoneal cases, of which the case I have reported is an example, are not really cases of perityphlitis as that term should be employed, but are cases of perforative peritonitis. The essential feature of the pathological state here is faecal extravasation (gaseous, fluid or solid), and septic peritonitis. In these cases the tumor is less prominent as a symptom than in the other variety of pericæcal inflammation, but the illness is more sudden and severe, the symptoms of peritonitis become conspicuous, and the signs of collapse may quickly supervene.

In cases of perityphlitis where a tumor presents and inflammatory action is moderate, expectant methods are admissible with a hope of resolution without suppuration. When pus forms in the retroperitoneal connective tissue and is making its way toward the surface, delay may facilitate its access by allowing the peritoneum to be pushed aside. But this advantage does not counterbalance the benefits of an exploratory incision, which should be resorted to as soon as grave symptoms suggest it. The aspirator is unreliable and unsatisfactory as an exploratory means in these cases, and its use is attended with the danger of peritoneal infection. The exploratory incision is more free from danger and much more satisfactory.

With the other class of cases such discretion cannot be indulged. As soon as the diagnosis of intraperitoneal inflammation is made, abdominal section should at once be performed. Delay here is fatal. To stand in waiting, giving opium freely, is neither conservative nor surgical. The operation should be done before the septic process has spread throughout the peritoneum.

⁴Treves has shown by the examination of 100 bodies that the cæcum and appendix are wholly intraperitoneal, and free within the abdominal cavity; that the cæcum and its appendix are completely enveloped by peritoneum. (The Anatomy of the Intestinal Canal and Peritoneum in Man, 1885, p. 55.)

In the case here reported I believe success is due to the early detection of the lesions by the gentlemen in attendance, the prompt acceptance by the patient of the operation when proposed, and its satisfactory accomplishment. The case, I believe, is unique, and marks a further extension of the triumphs of abdominal surgery.

VITAL CAPACITY OF THE LUNGS AND THE VACUUM PNEUMATIC SPIROMETER.

BY JOSEPH JONES, M.D.,
OF NEW ORLEANS.

PRESIDENT OF THE LOUISIANA STATE MEDICAL SOCIETY.

The instruments for measuring the vital capacity of the chest have been designed to measure the total amount of air propelled from the chest by the deepest expiration following upon the deepest inspiration.

Our most important knowledge of spirometry was derived from Dr. Hutchinson's exhaustive paper in the *Medico-Chirurgical Transactions* of 1846. The instrument designed by Hutchinson consisted of a mouth-piece and tube communicating with a gasometer of registered and graduated capacity, into which the patient breathed.

Mr. Towne has of late years invented a convenient and accurate spirometer, which works on the principle of the anemometer. The advantage of this instrument is its portability. As is well known the *anemometer* is a contrivance used by the meteorologist for indicating the rate or velocity and direction of the wind.

Dr. Waldenburg has described a spirometer identical in principle with Hutchinson's, but elaborate and capable of being employed for the purpose of inhalation of compressed or rarified air.

The chief results of Dr. Hutchinson's labors may be thus summarized: The vital capacity of the lungs varies according to height, weight, age and disease.

1. *Height*.—There is an increase of 8 cubic inches in vital capacity for every inch in height between 5 feet and 6 feet. Thus the vital capacity of a healthy person at 5 feet to 5 feet 1 inch being 174 cubic inches. At 5 feet 4 inches it would be 174 cubic feet + 32 = 206 cubic inches. At 5 feet 8 inches 238 cubic inches, etc.

2. *Weight*.—Excess in body weight is associated with diminished capacity in the proportion of about 1 cubic inch per pound, excess.

3. *Age*.—From 30 to 60 years the vital capacity decreases nearly 1 and 1½ cub. in. per year.

4. *Disease*.—The spirometer furnishes a very accurate standard of health, or of the extent of disease as regards the chest, the vital capacity in lung disease diminishing from 10 to 70 per cent.

Whenever the quantity of air is 16 per cent.

deficient there is reason to suspect some local affection of the chest. Dr. Graham Balfour has followed up these investigations of Dr. Hutchinsson on the chest. Dr. Balfour has especially examined how far a capacity under the average may be taken as an indication either of a tendency to pulmonary disease or of a feeble constitution, rendering such men liable to a higher rate of mortality than that to which men of or above the average are subject. He found that the loss to the British army by consumption was much greater among the men having a *vital capacity* "under the average" than amongst men of average capacity, or above it; and although the proportion of deaths did not differ materially amongst those three classes, yet the invaliding was *four times* as high among men *under the average*, as among the others.

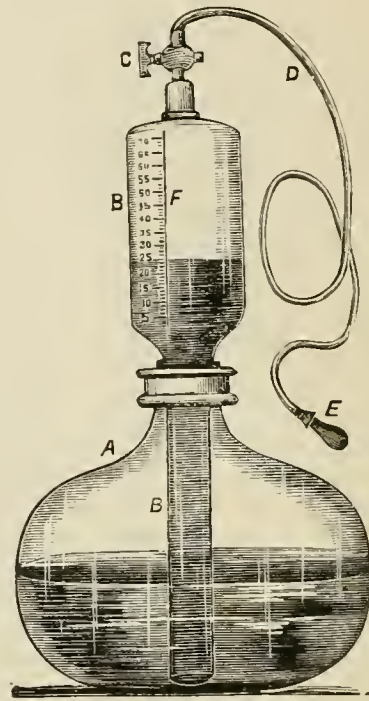
A "*vital capacity*" below the average may therefore be considered as indicating a generally feeble organization, less capable of resisting the deteriorating influences to which a soldier is exposed. (Contributions to the study of "Spirometry." Med. Chir. Transactions, Vol. XLVIII.)

Such functional incapacity is further indicated by the "*breathing being shorter* with less breath motion." The *expiration* is quick and forcible; and there is a minimum quantity of air taken in by ordinary *inspiration*. Such lessened respiration tends of itself to induce accumulation of mucus in the air cells, and thereby to set up inflammation. Everything which tends to impede or to interrupt or obstruct the regular, complete and continual performance of the respiratory act, has a most prejudicial effect upon the lungs (especially of "growing lads"), favoring the growing of the material in the air cells, which may eventually degenerate and form a cheesy mass in all respects resembling tubercle. Life not only depends on *breathing*, but the energy and the vigor of life are in a great measure ruled by the capacity and the free play of the breathing organs.—(Sibson.)

During the past eighteen years I have employed the following apparatus as an important aid in the diagnosis of phthisis, pulmonalis and other acute and chronic diseases of the pleura and lungs. The instrument has also proved useful in my hands, for the determination of the vital capacity of the lungs, as influenced by *age, weight, stature, development and growth of the skeleton, the growth of the muscles in relation to the bones; the progressive increase or decrease of muscular force with advancing years; and the effects of preceding attacks of pleuritis, pneumo-thorax; hydro-pneumo-thorax; bronchitis; asthma; emphysema and traumatic injuries of the lungs.*

The Vacuum Pneumatic Spirometer consists of a large glass globe or receiver. A. This receiver should be furnished with water to the amount of at least half its capacity. It is best to dissolve

about 1 ounce of the permanganate of potash in the water, so as to remove by oxidation all deleterious organic matter which at any time might be absorbed. Diameter of large glass receiver 15 inches; circumference of largest part of large glass receiver 48 inches.



VACUUM—PNEUMATIC SPIROMETER.

- A. Large glass receiver containing pure or medicated water.
- BB. Glass tube and small graduated glass receiver.
- C. Glass stop-cock, communicating with graduated glass receiver.
- D. Flexible tube, communicating with graduated receiver B.
- E. Mouth-piece communicating with flexible tube.
- F. Graduated line indicating the capacity of the receiver in cubic inches.

B.B. Glass tube and small graduated glass receiver.

Diameter of large glass tube connected with small graduated receiver $1\frac{3}{4}$ inches. The tube and small graduated glass receiver may be compared to a large displacement funnel; closed on the top by a brass cap and tube, with stop-cock both capable of opening and closing. Diameter of graduated receiver 6 inches, circumference of graduated receiver 20 inches. Length of graduated receiver $12\frac{1}{2}$ inches. Length of glass tube attached to graduated receiver $11\frac{3}{4}$ inches. Height of entire apparatus from the base of the large receiver to end of stop-cock 30 inches. The summit of the large glass globe is covered by the brass cap, 4 inches in diameter, with an internal opening of about 2 inches, through which the large glass or prolongation of the graduated receiver passes. The brass cap is also perforated by eight openings, circular, and about $\frac{1}{10}$ of an inch, each in diameter. These openings allow

free communication between the external air, and that contained in the large receiver above the liquid which it contains. The tube of the graduated receiver passes through the brass cap or support on the top of the large receiver, and reaches to within about 2 inches of the bottom of the liquid. From this arrangement, if air be blown through the flexible tube E., it will pass out of the receiver and tube, and bubble through the water and escape by the brass cap. The base or lower portion of the graduated receiver is supported by the brass cap, covering the neck of the large receiver. F. Graduated line, indicating the capacity of the receiver in cubic inches. The O mark is at the lower extremity of the large glass tube or funnel like prolongation of the graduated receiver, and the graduation proceeds regularly upwards to 240 cubic inches. The graduated portion of the receiver holds 240 cubic inches, or about 3952.2 cubic centimetres, or about 128 fluid ounces = one gallon.

MODE OF USING THE VACUUM PNEUMATIC SPIROMETER.

The patient is directed to expel all the air out of the lungs, bending the body gently and steadily forward, as he expires, so as to aid the expulsion of all the air, if possible from the lungs. The mouth-piece of the flexible tube is then placed between the lips and firmly held, whilst the patient inflates his lungs from the air confined in the graduated receiver. A partial vacuum is thus formed, and the pressure of the atmosphere about 15 pounds to the square inch forces the water in the large receiver into the tube and receiver. The amount of air thus inspired corresponds to the column of liquid which rises in the graduated receiver and is indicated in cubic inches.

GENERAL RESULTS OF INVESTIGATIONS ON THE VITAL CAPACITY OF THE LUNGS IN HEALTHY AND DISEASED INDIVIDUALS, AS SHOWN BY THE INDICATIONS OF THE VACUUM—PNEUMATIC SPIROMETER.

1. The accuracy of the conclusions of Dr. Hutchinson as to the relation of height, weight, age and disease to the vital capacity of the lungs have been confirmed by over 1000 experiments. The general results of the investigations of Dr. Balfour have also been confirmed.

2. In cases of incipient tuberculosis, or in the early stages of this disease the cubic vital capacity of the lungs irrespective of the height or weight, or age of the adult patient (male) do not exceed on an average 130 cubic inches.

3. In the advanced stages of phthisis pulmonalis, the vital capacity of the lungs in adult males ranges from 60 to 120 cubic inches.

4. No correct estimate can be made of the cubic capacity of the female lung, unless the corsets

and all bandages be removed from the thorax and abdomen.

Similar decrease in vital capacity of the lungs is noticed in the female suffering with phthisis pulmonalis.

5. The vital capacity of the lungs is diminished in chronic bronchitis and in pleuritis. In the latter disease, the diminution of the vital capacity in the lungs will correspond with the amount of liquid effused into one or both pleural cavities.

6. The vital capacity of the lungs is diminished in emphysema, in asthma during the paroxysm when the disease is spasmodic, in permanent asthmatic conditions of the lungs, and to a limited extent in chronic bronchitis.

7. Certain cases of general paralysis and locomotor ataxia, when attended with diminution of the vital capacity of the lungs, without structural alteration, or the deposit of tubercles in these organs, such diminution being due to the loss of muscular power in the thoracic walls.

8. If the liquid contained in the large glass receiver be medicated with carbolic acid, iodine, petroleum or other volatile substances, beneficial effects may result from the use of the vacuum pneumatic spirometer.

9. The daily inflation of the lungs, by the use of the vacuum pneumatic spirometer has proved beneficial in some cases by enlarging the capacity of the air-cells. We have the means of observing accurately the changes in the capacity of each individual under treatment.

10. The use of the vacuum pneumatic spirometer, gives precision to diagnosis, and accuracy to prognosis.

156 Washington St., 4th District, New Orleans, La.,
April 23, 1888.

THE EXTERNAL APPLICATION OF SULPHUR IN SCIATIC NEURALGIA.

Read before the Illinois State Medical Society, at its Thirty-eighth Annual Meeting, in Rock Island, Ill., May 15, 1888.

BY J. D. COWDEN, M.D.,
OF ROCK ISLAND, ILL.

Sulphurous baths, natural and artificial, have been in vogue for a long time in the treatment of rheumatism and neuralgia. The external application of the flowers of sulphur, however, in the treatment of sciatica, although its therapy, on second thought, from our previous knowledge of the action of sulphur, would seem rational enough, has but recently been tried.

In the *Therapeutic Gazette*, for April, 1888, will be found an article on "The External Application of Sulphur in Sciatic Neuralgia." In confirmation of what is therein stated, I beg leave to report to this Society the following case which recently came under my observation:

J. R., æt. 45, weighing 180 lbs., an Irishman of sanguine temperament and strong constitution,

in robust health up to the time of this attack; saloon-keeper by occupation, "very happy" in his calling and "cheerfully waited upon his customers." For two months before I was called to see him he had been an almost constant sufferer from sciatic neuralgia. He finally became unable to walk about, took to his bed, and to use his own language at the time I first saw him: "I am suffering the tortures of the damned and am not able to sit, stand, nor lie." He had a haggard, worn look, and his condition indeed pitiable in the extreme. For some four weeks the usual remedies for neuralgia were tried with indifferent results, until finally, in addition to the usual treatment it took morph. sulph. gr. ss.; atropia sulph. gr. $\frac{1}{16}$, hypodermically, twice or three times in the twenty-four hours to give him even temporary relief from his horrible suffering. At the end of this time I called one morning and found him in agony, writhing in torture and completely discouraged. He begged most piteously for the hypodermic injection and said he would die. I told him I would give him no more hypodermics and no more medicine, but would bury him in sulphur instead. He then said: "My God! doctor, I will die before night if I don't get relief." I told him that if the sulphur did not relieve him he would have to die, as that would be the only treatment for the next twenty-four hours.

The limb was accordingly enveloped in the dry sulphur. In less than two hours he was sweating profusely, sleeping soundly, and oblivious to all pain and suffering. He woke up in the evening long enough to take some nourishment, then again fell asleep and slept continuously during the following night, the perspiration continuing, and awoke in the morning free from pain, able to turn over in bed and move and extend the limb in all directions without complaint. The look of suffering that had been so marked before the application of the sulphur was gone. He then got up and, to his great surprise, walked easily about the room without suffering or pain. He was then put into a large wash-tub, thoroughly scrubbed and washed with soap and water, after which, at his own request, he was again put to bed and the sulphur reapplied to the limb and sacral region of the spine. The next morning he was given another bath, the neuralgia had disappeared, and from that time on, without further medication, his recovery was continuous and, so far as the pain is concerned, up to this writing is complete.

For a few days after discontinuing the sulphur he suffered from sleeplessness and nervous prostration, but the further progress of the case towards recovery was left to the *vis medicatrix nature*.

The perspiration, the breath, and urine, after the application of the sulphur, were very soon impregnated with sulphuretted hydrogen, making it very disagreeable for the patient and his attendants on that account. The rapid absorption of

the sulphur, as shown by the profuse perspiration, perfumed breath, etc., and the speedy relief which followed its application, would seem to point to a specific action of the remedy.

On April 30, some two weeks after the above report was written, the patient had a relapse, caused by sleeping in a draft between two open windows, and the sulphur had to be reapplied. The same happy effect, entire relief from pain, followed as quickly and promptly as it did on the first application of the remedy.

On May 10, in consequence of his anæmic condition, caused by his long sickness, I put him on 20-drop doses of the tincture of iron four times a day, since which time he has rapidly gained in health and is now entirely free from his neuralgia.

"There is a pleasure in the pathless woods" of speculative medical philosophy, "a rapture on the lonely shores" of the imagination of the disconcerted doctor, known only to certain medical minds so formed as to be ever open to the reception of theoretical ideas and impressions for the relief of suffering humanity. It may yet prove to be a most happy conception, freighted with relief for suffering mortals, which suggested to the imagination of the enthusiastic, speculative medical philosopher the idea of applying sulphur externally in sciatic neuralgia, so quickly and speedily does entire relief from horrible suffering follow its application.

MEDICAL PROGRESS.

SULPHONAL AS A HYPNOTIC.—DRS. J. C. WILSON and R. HUTCHINSON report five cases in which sulphonal was used. *Case 1* was a control test to the subsequent investigations, gr. xxv of the drug were given to a healthy male adult upon retiring, with no more effect than his normal, peaceful repose, and with no ill-effects whatever. In the second case, one of terminal dementia, with a history of alcoholism and opium taking, with marked delusions of a depressing character, and acute exacerbations at irregular periods, when he becomes restless, sleepless and noisy. Gr. xxv and lv of sulphonal within four hours had no perceptible effect. The only case in which it had any effect was that of a male, 46 years old, in the preataxic stage of *tabes dorsalis*: business worries; habitual bad sleep; frequent excesses in drink, followed as a rule, by great mental and physical depression and prolonged inability to sleep, often extended, despite large doses of chloral, the bromides, hyoscine, etc., for several nights in succession. Morphine hypodermically not well borne. May 25, after two nights of distressing wakefulness, took 15 grains of sulphonal at 6 P.M.; 30 grains at 7 P.M.; 15 grains at midnight, after which he slept quietly for two hours.

May 26, took at 11 P.M., 30 grains, and slept continuously eight hours without interruption. May 27, took at 10.30 P.M., 30 grains without effect. This patient suffered from the gastro-hepatic catarrh, which usually follows a prolonged debauch, and took even liquid food with difficulty; much thirst and nausea; occasional vomiting. No aggravation of these symptoms, and no effect whatever upon the pulse, respiration or temperature, followed the administration of the sulphonal. The preparation used in these observations was Merck's.

These observers regard sulphonal as superior as a hypnotic to chloral, paraldehyde, the bromides, amylene hydrate, opium, and cannabis indica. It is a pure hypnotic, and without disagreeable after-effects.

The dose for an adult is $\frac{1}{4}$ grams (gr. xv-lx). It may be given in water or mixed with fluid articles of diet. In these doses sulphonal has no influence on the digestive organs, nor on the respiration, circulation or temperature.—*Medical and Surgical Reporter*, June 9, 1888.

ESERINE IN CORNEAL ULCERS.—DR. HERBERT HARLAN, of Baltimore, says in an article on this subject:

Having been much impressed with the value of eserine in corneal ulcerations, and finding that very few druggists, even in so large a city as Baltimore, keep a supply of the drug on hand, it occurred to me that physicians were neglecting a valuable remedy, and that it would perhaps not be amiss were I to call attention to its value as a therapeutic agent in this class of cases. The best-known physiological effect is the marked contraction of the pupil following the installation even of very dilute solutions into the eye. It was in 1875 that the anti-glancomatous effect of eserine was first discovered by Professor Laqueur, of Strasburg, and its very greatest value is in this terrible disease.

That eserine has the power of lessening intra-ocular tension has been demonstrated by many observers. In ulceration of the cornea the worst symptom is the photophobia, and the greatest danger is rupture of the eyeball from intra-ocular pressure. We thus have an agent which, while it contracts the pupil, and shuts out much of the annoying light, at the same time lessens pressure and the danger of rupture, keeping the eye in the best condition for the reparative process, and the patient in the most comfortable situation possible during this time. Thus, theoretically, eserine should be a valuable agent in corneal ulceration, and I think the cases reported below bear me out in the statement that it really is.

There is one variety of corneal ulcer to which I have found it particularly adapted, namely, that following a blow from a piece of an oyster-shell, described first, I believe, by Dr. W. J. McDowell

in 1879, under the name of "oyster-shucker's corneitis." My experience, however, extending over the last seven years, differs from that of Dr. McDowell in several particulars. First, he lays especial stress on the central location of the lesion, which he refers to as a "pearly opacity of interstitial exudation, appearing always near the centre of the cornea." The etiology he considers "a specific toxic element contained in the slime and dirt which coats the oyster-shell," which, getting into the eye, starts the trouble; for, says he, "no trace of traumatism can, by the closest scrutiny, be detected." My notes of cases show that the spots occur anywhere on the surface of the cornea, often there is evidence of traumatism, and I have many times removed small pieces of shell. Still, in most cases, there is no break in the smooth corneal surface. For the first few days there is merely the perfectly circular white spot, accompanied by photophobia and congestion of the scleral zone of blood-vessels. A few such cases go on to get well with simple treatment and without complications. The majority do not, and after several days the opacity is very white and looks much like a foreign body. If any attempt be made to remove it as such, it will be found to be a slough of the outer layer of corneal tissue, free at the edges, and only attached at the very bottom. A day or two later this slough comes away, leaving an ulcer with sharply cut edges of about the size of the head of a large pin. Until I began to use eserine I found these ulcers often very intractable, entailing on the patient, in most instances, several weeks of suffering.

Of the eighteen cases ten were surely and positively benefited, being under observation several days. Seven were seen but once, and from this fact it is a fair presumption that most of them required no further treatment. One case only did not seem to be benefited. This patient was under observation for seventeen days, and during this time various remedies were used without avail. On his last visit he was directed to return to the use of the eserine. His case was not from injury by oyster-shell.

Finally, in the use of eserine two cautions are to be observed: First, not to make the solutions too strong. With many patients a solution stronger than gr. j. to $\bar{3}$ j. gives a great deal of pain; and, second, to be very sure that the case you are treating is not complicated by iritis.—*The Medical Record*, June 23, 1888.

TREATMENT OF CARDIAC AFFECTIONS.—That adonis vernalis in doses of from 3 to 7 grams in twenty-four hours, and convallaria majalis, do not merit the appellation of substitutes for digitalis is Notlmagel's clear conclusion. But they may be tried if digitalis has failed. Sparteine prescribed in milligramme doses regulates the pulse and modifies the contractions of the heart,

but it does not possess the diuretic action or the influence over blood pressure possessed by digitalis. Caffeine ought to be prescribed in minimal doses of 1 gram every day, in 5 parts. Nothnagel has used 3 grams, and prefers either the salicylate of soda and caffeine, or the benzoate of soda and caffeine. Its only inconvenience is the excitation of the nervous system; but it is an excellent diuretic, and especially indicated where there is dropsy. Nothnagel alternates five or six days of digitalis with ten or twelve of caffeine. It would be preferable to combine calomel with opium when it is wished to cause diuresis, according to the method of Jendrassik (.5 to .6 gram of calomel during three or four days). But it is necessary to cause evacuations, lest the calomel be transformed into sublimate and attack the intestinal mucous membrane; of course the mucous membrane of the mouth must be watched. As to the method of Oertel and the treatment of cardiac degeneration by ascension of heights combined with subtraction of liquids, Nothnagel, although very sceptical, appears inclined towards the view that the ascensions may exercise a stimulant effect on the degenerated heart muscle and cause a useful hypertrophy, but that prudence is highly necessary in recommending this variety of treatment.—*Lancet*, June 2, 1888.

BOILING WATER IN SURGERY.—In a lecture on "Certain Antiseptic Principles, and on the Value of Boiling Water in Surgery," M. TERRILLON says that the supposed sterilization of instruments by plunging them into an antiseptic liquid, such as a 20 per cent. solution of carbolic acid, is only illusory disinfection, since it is necessary that the antiseptic solution penetrate to all the crevices and anfractuosités of the instrument, which is often a difficult thing to realize on account of dried blood-clots, etc., in such places as the teeth of hæmostatic forceps. For these reasons Terrillon began two years ago to sterilize his instruments by placing them in boiling water for ten minutes. He has every reason to be satisfied with the results.

Every instrument intended for use in an operation should be boiled for ten minutes in water that has passed through a Chamberland filter. At the time of the operation these instruments are placed in a glass or porcelain plate, and a solution of carbolic acid is poured over them. At the conclusion of the operation the instruments are thoroughly cleansed, being placed in tepid water for a few minutes, and then scrubbed with an appropriate brush, which has been washed, soaped, and passed through potash and carbolic solutions. They are then plunged into boiling water, where they are left for ten minutes. After this the instruments are placed in a special vessel, in which they are excluded from the outer air until the next operation, when they are again boiled. This double boiling at intervals of several days is especially

useful, since it insures the destruction of spores. All parts of surgical instruments should be metal. Terrillon's instruments have no wooden parts of any kind.

Sponges are difficult to render aseptic. They should not be placed in boiling water, since this injures them. They are first washed in water to free them from foreign substances, then placed in a solution of permanganate of potash for several days, washed again, and then placed in a 5 per cent. solution of carbolic acid or a solution of corrosive sublimate for seven or eight days. To keep them they should be dried and shut up in a dry jar, or placed in a weak antiseptic solution.

Terrillon sometimes uses sponge tissue, which he prepares in pieces as large as the hand. These, stitched together, make excellent compresses. To sterilize them he uses soap and water, and then boils them for a quarter or half an hour in strong carbolic solution, and keeps them in an antiseptic liquid.

To prepare silk for ligature material, it should be boiled for a few minutes, and then kept in sublimate solution, or in a very weak solution of carbolic acid. When needed for an operation, it is taken from the receptacle with a pair of forceps, and plunged into boiling water.—*Bulletin Médical*, No. 46, 1888.

THE USES OF BELA.—The *Cratæva marmelos*, known in India as the Bel or Bela tree, belongs to the family Ruteceæ, series Aurantiæ. The root, bark and leaves are thought in Malabar to be refrigerant. The bark of the root is prescribed in India in the form of decoction in intermittent fever, and the bruised and boiled leaves are used as cataplasms in ophthalmia. The decoction of the bark of the trunk is used in cardiac affections, and the distilled water of the leaves is regarded as alexipharmic. But the part most used is the fruit, especially its mucilaginous pulp, which has an agreeable odor and sweet flavor. By dessication it loses its aroma, but preserves a slight acidity. In commerce the fruit is obtained entire or in dried slices, grayish, with a smooth exterior coat, containing a gummy pulp, hard, and of a brownish or orange color. The microscope shows that the fruit has a thick cuticle and two layers, one containing numerous cells filled with small oily drops, the second formed of silerenchymatous layers. The pulp is formed of large cells. The grains yield up to water a mucilage similar to that of flaxseed.

As regards the chemical composition of the pulp, its chief contents are mucilage and pectin. The first is not colored by iodine, and consists of two substances, one of which is soluble in water. The second is not soluble, but swells up like gum tragacanth, forming a glutinous transparent mixture. Collas, physician in chief of the marine at Pondicherry, has found 5 per cent. of tannin in

this pulp, though Flückinger could find no traces of it. But according to Warden the fruit, ripe or unripe, moistened with a solution of chloride of iron, gives a pronounced tannin reaction in the part of the pulp near the epicarp. The mucilage in the grains is acid, and contains lime.

The pulpy part of the fruit, when ripe, is said to be of agreeable flavor, and is relished even by Europeans when made into sorbet and mixed with tamarind pulp. It acts as a slight laxative, and is useful in cases of habitual constipation accompanied by flatulence, and has been recommended for the purpose of regulating the bowels during an epidemic of cholera, to prevent either constipation or diarrhœa. In India the unripe fruit is regarded as an astringent, and is recommended as a valuable remedy in chronic diarrhœa, dysentery. The bela mixture, 2 parts of the pulp, $\frac{1}{4}$ of water, and 2 of sugar, in the form of sorbet, is said not only to act well in diarrhœa, but also has the singular property of being aperient as well. If this is rejected by the stomach the extract may be substituted for it. The extract is obtained by treating the pulp with water, and then evaporating to a soft consistency. The dose is from 2 to 4 grams two or three times a day. It is more active when made from the fresh pulp.—*Nouveaux Remèdes*, No. 8, 1888.

SUTURE OF WOUNDED LIVER.—The *Riforma Medica* of June 9th contains a full account of PROFESSOR POSTEMPSKI'S operation for wounded liver. Antonio A., aged 28, was stabbed under the arch of the ribs, on the right side, on April 18th. The cutaneous wound, which was parallel to the costal margins, was five centimètres in length, whilst that of the liver (left lobe) was seven centimètres long, and three in depth at the deepest part. The patient, when seen, was in a state of profound collapse from loss of blood. There was no difficulty about the diagnosis, as exploration with the finger served to disclose the nature of the case. Professor Postempski, who had satisfied himself so far back as 1885, by experiments on dogs, that the liver-substance could be stitched without giving way, determined to try that mode of treatment. He accordingly enlarged the wound in the skin by five centimètres, and made a second vertical incision in the middle line across the first. The wounded lobe was pushed forward as far as possible, and, while the pieces of sublimated gauze, with which the wound had in the first instance been plugged, were being withdrawn, six points of chromiced catgut suture were passed through the whole depth of the wound with extremely fine curved needles. The sutures were very carefully tightened as they were introduced, the edges of the wound being at the same time gently pressed together, so that the loop of catgut did not draw them into contact, but merely kept them in apposition. The sutures

were tied in a knot, and there was not the slightest laceration of the liver-substance through which they were passed. Hæmorrhage ceased at once, but the critical condition of the patient made it impossible to wash out the peritoneal cavity at all thoroughly, and Dr. Postempski believes that the greater part of the extravasated blood remained in the abdomen. There was no rise of temperature, however; but, on the second day after the operation, there was very abundant albuminuria, which lasted for twenty-four hours, when it completely ceased. The patient got up on the eighteenth day, and he is now perfectly well, without any local pain, or any appreciable enlargement of the liver.—*British Medical Journal*, June 16, 1888.

CARBOLATE OF MERCURY.—The compound originally recommended by GAMBERINI was a basic salt, having the composition $C_6H_5OHg.OH$, and prepared by dissolving 122 parts of carbolate of potash in 1000 parts of water, and pouring the filtered solution into a solution of 271 parts of mercuric chloride in 8000 parts of water. An orange-colored precipitate is formed and collected on a filter, thoroughly washed, and dried in the dark at a temperature of $80^{\circ}C$. The neutral salt is, however, preferred; its formula is $(C_6H_5O)_2Hg$. To make it dissolve, 188 parts of absolute phenol and 56 parts of solid caustic potash on a water-bath in the smallest possible quantity of alcohol. Add to this an alcoholic solution of 135 parts of corrosive sublimate. Evaporate the mixture nearly to dryness with constant stirring; add some boiling water, and collect the product on a filter; wash first with pure water, then with water containing acetic acid; drain the product on a porous tile, and recrystallize from alcohol. The salt forms colorless needles, nearly insoluble in water and only slightly so in cold alcohol. It dissolves in 20 parts of boiling alcohol, also in ether and in glacial acetic acid. It is not decomposed by caustic alkalies, by sulphuretted hydrogen, or even by ammonium sulphide. Dose $\frac{1}{2}$ to $\frac{1}{3}$ grain three times a day.—*Pharmaceutical Record*, June 1, 1888.

ANTIPYRIN IN CEREBRO-SPINAL MENINGITIS. MR. GUY N. STEPHEN, of the Cyprus Medical Service, says: Antipyrin is of the greatest possible value in epidemic cerebro-spinal meningitis. Its success in the disease depends less on its property of reducing temperature than on its power of quelling those "nerve storms" which are one of the principal causes of death in this disease.

Its value is all the greater in that it is not, as in the case of other diseases, only a mere addition to the armament of the physician, but that it is practically the only medicine which is a real "remedy" against the disease.

Opium, ergot and belladonna, bromides, and aconite all do good service in allaying the terrible pains, and perhaps in favorably influencing the course of the disease, but they have no power of warding off impending death, while antipyrin I have found to fulfil all three indications. The necessary doses vary somewhat, but 45 grains in three doses distributed over the evening and night is the most usually successful quantity. I have not yet had an opportunity of trying it in idiopathic, traumatic, or tubercular inflammations of the meninges, but the pathological conditions, apart from the causation and the symptoms, are so allied in character with those of cerebro-spinal fever that I would suggest a trial and expect it to yield results at least as favorable as those of the remedies already in vogue.—*British Medical Journal*, June 9, 1888.

PUERPERAL URÆMIC AMAUROSIS.—A case of uræmic amaurosis in the puerperal period is noted by DR. P. MARCUSE. The patient remarked five weeks before delivery that her urine was dark and scanty and that her feet were swollen. Immediately before her confinement the secretion of urine almost entirely ceased, but there was no headache, vomiting, or loss of consciousness. As soon as the pains began, however, violent headache came on. The labor was normal; after it was over, vomiting was added to the headache, and a quarter of an hour later the patient was completely blind in both eyes. The next day the eyelids were closed. When opened with the fingers the eyes appeared dull and wandering; the pupils were of equal size; there was complete amaurosis; both feet and legs were greatly swollen; but there was no swelling of the face, and very little ascites. During twenty-four hours the urine passed was about nine ounces; it was of a dark reddish-brown color, and contained 1 per cent. of albumen. Ipecacuana, morphia and diuretics were ordered. The patient very soon improved. In four days she could see to read, and in a fortnight she was convalescent.—*Lancet*, June 16, 1888.

SEMOLINA IN DIABETES.—MR. W. STANLEY ARMITAGE writes, in the *Lancet* of April 28, 1888:

Some time ago I had the opportunity of watching a case of persistent glycosuria very closely, and found that at a time when the ingestion of a very small amount of toast, bread, or other farinaceous food was sufficient to produce Fehling's test afterwards in the urine a large quantity of semolina pudding could be consumed without any such result. I was induced to try semolina after hearing of the method of its manufacture from an Edinburgh gentleman. As the quality of this food seems to me likely to vary, I ought to state that what was used in this case was obtained of an Edinburgh house, and was stated to be of the best. This I mention because,

if carelessly prepared, no doubt much of the farinaceous element might be retained, though I am not aware that this ever is the case. Not having heard of semolina as a food in diabetes, I should much like to hear of anyone who may have tried it, and would also request other medical men to see if it can be given in other and more pronounced cases of diabetes with a like good result. If such were the case, as it could be cooked in various forms, or baked as bread, it would add considerably to a class of food which is at present only far too limited.

PHYSIOLOGICAL AND THERAPEUTIC PROPERTIES OF OLEANDER.—DR. POULOUX, at the close of a thesis on this subject, draws the following conclusions:

1. Oleander (*nerium oleander*) is a very active poison, the toxic properties of which are due to several substances somewhat similar to strophanthine and digitaline, and probably belonging to the group of glucosides.

2. Oleander has a manifest action on the frog's heart, arresting it in systole, as well as on the heart of the rabbit.

3. In cases of asystolism due to renal, non-compensated or cardiac lesion, oleander gives tone to the heart, and increases diuresis. It seems to be indicated in the same cases as digitalis.

4. Further researches are necessary to determine the cases in which oleander is really useful and in which it is contraindicated.

5. It does not cause cumulative symptoms, and may be given for an indefinite time without causing accidents.—*Nouveaux Remèdes*, No. 8, 1888.

ACTION OF STROPHANTHINE.—GLEY claims that his effects from strophanthine are entirely different from those obtained by Lemoigne with extract of strophanthus. He has found that not only in diuresis not produced by the active principle, but that the quantity of urine is diminished, and that the kidney decreases in size, as shown by mensuration. There is an enormous increase in central and peripheral pressure. These facts seem to show that there is some other substance in the extract than the active principle.

THE TREATMENT OF PERFORATIONS OF THE TYMPANUM.—DR. POLO states that he has met with great success in the use of the fresh pellicle of the egg in closing perforations of the tympanum. The grafting of such a thin organized substance excites no irritation, and may be retained for a long time; as long as ten months. The application of the membrane is difficult, and requires skill. The use of gold beater's skin has been practiced for this purpose a long time in Paris, but it remains as a foreign body, and does not permanently adhere, whence it becomes a source of irritation at the bottom of the meatus.—*Journal de Méd. de Paris*, April 22, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.
PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JULY 7, 1888.

MEDICAL COLLEGES AND MEDICAL ETHICS.

A correspondent connected with a regular medical college writes us substantially as follows: A man matriculates in the medical college as a student, attends one annual course of instruction and proposes to continue the required length of time, and become a candidate for the degree of M.D., in apparent regular course. At the same time he holds a *diploma* from another medical college that he tacitly acknowledges he simply *purchased*; that he is now, and has been for some time, publicly engaged in the treatment of disease with a secret remedy; and that he will not agree to discontinue such practice should he receive the regular diploma of the college in which he is a matriculate. With this statement of facts, our correspondent requests from us answers to the following questions: 1st. Can the college confer upon him its degree of Doctor of Medicine without violating some provision of the National Code of Medical Ethics? 2d. If the said matriculate continues his attendance and conforms to all the published requirements of the college, including certificates of moral character, has the college the right legally to refuse to confer on him the diploma, on account of his known practice with secret remedies?

The following paragraph from the Code of Medical Ethics, is perhaps the most direct answer to the first question, viz.:

"It is not in accord with the interests of the public or the honor of the profession that any physician or medical teacher should examine or

sign diplomas or certificates of proficiency for, or otherwise be specially concerned with the *graduation* of persons whom they have good reason to believe intend to support and practice any *exclusive* and irregular system of medicine." Treating disease with *secret* remedies is certainly the climax of *exclusiveness*. And another paragraph in the same division of the Code says: "Equally derogatory to professional character is it for a physician to dispense a *secret nostrum*, whether it be the composition or exclusive property of himself or others."

Concerning the second question we have no hesitation in answering in the affirmative. The faculty and trustees of a medical college have an undoubted right to refuse granting the diploma to any person whose known professional practices are such as would debar him from every reputable medical society in this country and exclude him from professional recognition by members of the profession generally. Not only have they such right, but they are under the strongest obligation to faithfully exercise that right, by refusing such an one a place in any list of *candidates* for graduation.

EYE TROUBLES IN TABES.

Some years ago M. EMILE BERGER made a report of a series of researches, in which he had been engaged, in Austria, in regard to the eye trouble caused by *tabes dorsalis*. These researches were finished in Paris, and on June 4 M. Berger made a second report on the subject, to the Académie des Sciences. This report includes 109 cases, of which 47 were syphilitic, 26 were in the pre-ataxic stage, 50 in the ataxic, and 33 in the paralytic stage.

Among the symptoms not hitherto described is diminution of intraocular tension, which was very striking, and was of all degrees up to feeble resistance of the globe. In 2 cases only was there hypertonia, but this was developed before the commencement of the *tabes*. Of the cases presenting considerable hypotonia, this phenomenon was present on one side only in 2 cases in the pre-ataxic stage, and in 11 cases each in the ataxic and paralytic stages; it was present on both sides in 4 cases each in the three stages. Hypotonia, therefore, is more infrequent in the pre-ataxic stage.

Another symptom noted was paralysis of the smooth muscular fibres of the eye-lids, which are

supplied by the sympathetic system. The consequence of this is slight narrowing of the palpebral opening. Narrowing of the palpebral opening was found in 42 cases, exclusive of cases of paralysis of the third pair: in 17 of these cases it was on one side only (3 in the pre-ataxic, 6 in the ataxic, and 8 in the paralytic stage). In 25 cases it was double (3 in the first stage, 9 in the second, and 13 in the third).

Myosis was found to coexist with diminution of the palpebral opening: in subjects affected on one side only, 6 times; in those affected on both sides, 11 times. The frequency of this slight fall of the pupil increased progressively from the commencement to the paralytic period.

Another symptom, hitherto unknown, is deformity of the pupil of tabetics, which frequently ceases to be circular; it is often elliptic, its long diameter being from without inwards and from below upwards, symmetrically on both sides (14 cases); in a few cases it was transverse (11 cases), or in other directions. In all Berger found 32 cases in the pre-ataxic stage, 20 in the ataxic, and 5 in the paralytic, in which the form of the pupil differed considerably from the normal circular; in almost all cases this was combined with myosis. This phenomenon, says Berger, is strongly against the opinion that tabetic myosis depends on spasmodic stricture of the sphincter of the iris, and he rather thinks it due to paralysis of the iridal vessels—unequal paralysis in the different meridians. But myosis very often coexisting with paralysis of the muscle of accommodation, it seems incomprehensible, from the neighboring origin of the nerve fibres of the two intro-ocular muscles, and their common path, that one should be in an active state for several years, while the other is paralyzed.

The coexistence of myosis, diminution of intra-ocular tension, and slight narrowing of the palpebral opening, reminds one of the analogous symptoms that appear after section of the great sympathetic, and shows that this nerve plays an important rôle in the existence of certain ocular symptoms in tabes. In fact, Vulpian's students have found pathological alterations in the sympathetic of tabetics. But the possibility of each of these symptoms presenting itself alone shows that sympathetic alterations are not the cause, but that this nerve is the path of transmission of irritations from the cord to the eye.

LIVER-TISSUE EMBOLI.

In the *Deutsches Archiv für klinische Medizin* for April, Bd. 42, Hft. 5, are recorded three cases of this exceedingly rare pathological condition. The first two are reported by G. SCHMORL, of the Pathological Institute in Leipzig. His first case was that of a railway employé, who was crushed between two cars, the liver being ruptured. At the autopsy the right auricle was found to contain a brownish-red mass, which proved to be liver-tissue. The piece was of irregular shape, about 3.5 cm. long, about 3 broad, and 2 cm. thick, weighing 35 grams. Its upper surface was uneven, and covered with numerous particles of liver-tissue. In the right ventricle was a similar piece, a little larger, caught between the anterior papillary muscle and the anterior wall of the ventricle. Smaller pieces were found between the trabeculæ. The left ventricle contained an oval piece of liver-tissue "about the size of a bean." The foramen ovale was not closed, and was permeable to a medium-sized finger.

The whole pulmonary vascular system contained embolic masses of liver-tissue, but more in the right lung. The main branch to the right lung was completely plugged. In both lungs there was extensive fat-embolism from the liver-cells. The renal arteries also contained liver-emboli, even in the left kidney, and other emboli were found in the vessels in other parts of the body.

This case is especially interesting on account of the patent foramen ovale, through which the embolic material reached the left heart. A somewhat similar case is recorded in Cohnheim's *Vorlesungen*, in which an embolus from the iliac vein passed through the foramen ovale into the Sylvian artery, in the case of a woman 35 years old. Litten has also recorded a case (*Virchow's Archiv*, Bd. 80, S. 281,) in which portions of a thrombus of the right heart passed through the foramen into the right iliac artery.

Schmorl's second case was that of a man that fell four stories, and was taken up dead. The liver was ruptured, but there was no injury to the vena cava inferior. The anterior wall of the left ventricle was ruptured, as was the endocardial lining of the posterior wall. The right auricle and ventricle contained pieces of liver-tissue. The pulmonary artery, and its large and small branches, especially those of the lower right lobe, also contained plugs of liver-tissue. No fat-emboli

could be found, but the pulmonary capillaries contained liver cells.

Jürgens and von Recklinghausen have reported cases of liver-tissue embolism. Jürgens reported several cases of delirium tremens with extensive fat-embolism of the lungs, spleen and kidneys, in which liver-cells were found in the right heart and capillaries. The report does not state whether in these cases there was any injury to the liver that caused the wandering off of liver cells into the blood-vessels, but it must be concluded that such was the case. Von Recklinghausen's case was one of fat-embolism of the lungs containing liver-cells.

As a supplement to Schmorl's cases VON ZENKER reports, in the same journal, a case of gunshot wound of the liver and heart with liver-tissue embolism. At the autopsy liver-emboli were found in two branches of the right pulmonary artery. The carbine ball had passed through both ventricles, the lower lobe of the right lung, the liver, and had torn the vena cava inferior.

In Schmorl's first case the heart had stopped in systole; it is evident, therefore, that between the rupture of the liver and the cessation of cardiac action there must have been at least one beat of the heart, and probably more, else there could not have been such wide dissemination of portions of liver-tissue. The case shows the negative pressure in the heart, the amount of the suction-power of the heart, even with a ruptured vena cava inferior, since notwithstanding this rupture, there was but a comparatively small amount of blood in the abdominal cavity. The cases also show that the right lung is the site of predilection of pulmonary emboli.

THE WAVE OF SURGICAL PROGRESS.

There are complaints on many sides that the medical journals are filled with surgical literature. Certain it is that, no one need complain of the lack of surgical literature nowadays, since the greater part of the space of both European and American journals is devoted to surgery. The "wave of deep surgical wisdom" that Mr. Gregg says is passing over America to-day, is but a portion of the wave that has overflowed Europe. And it may be safely said that while this wave may have caused some little destruction, the preponderating effect has been in the highest degree beneficial.

And one of these benefits of the present surgical tendency is the stimulating effect it has had on the profession. To a certain extent medical men may be said to be working both ways—from first to second, and again from remote back to first principles; and the first principles to which we are rapidly tending, and in which there is so much of promise for the future, consist in the recognition of chemistry, organic and physiological especially, as the field in which the greater part of future medical work must be done. We must find out what is going on in that busy laboratory, the human body, and what changes will take place in its retorts and crucibles under given conditions.

A moment's reflection will show that the present ascendancy of surgery is in a large measure due to the work that has been done in chemistry of late years. We can not regard the preponderance of surgical work as in any sense an evil. Thousands of years are being added to the aggregate of human life by it. It indicates increased activity on the part of the profession, and increased activity means broadening on the intellectual side of the profession, which must be accompanied always by better judgment, less dogmatism, more modesty, better *morale*, and a better profession in every respect. It would seem that there must be less individual exclusiveness in an active, intellect-working profession, more sociability. Busy brain-workers have no time for private quarrels and jealous bickerings. The fact that many are working is an incentive to others, less energetic, to be at some kind of work. In so far as circumstances will permit, each one will go about the work most suited to his tastes. When new fields of work are opened there will be found workers to enter them and labor in them.

There is but little doubt that the present wave of surgical progress will, after a time, give way to one of another branch of medicine. The solid groundwork that is being laid by surgeons will remain—there will be no steps backward—but there must come, sooner or later, a wave of progress in preventive medicine and physiological chemistry, which latter has but a small foothold in this country now. Meanwhile, so far from being a cause for complaint, there is reason to be thankful that surgical wisdom has not knocked in vain at our doors.

DANGERS OF SILVER TRACHEOTOMY TUBES.

DOCENT DR. ST. SZCZ. ZALESKI, of Dorpat, has recently called attention to the fact that silver tracheotomy tubes are corroded by the secretions of the body, with which they come in contact. He relates a case in which a tube was left in the trachea for two years, and at the end of this time there was nothing left but a mere shell. Zaleski explains the chemical process by which the metal was dissolved by the continual action of the chlorides, that exist in almost all the secretions of the body, upon the metallic silver. Chloride of silver is thus formed, and is acted upon by the alkaline secretions, which contain ammonia and cyanides, in the same way as the sulphocyanide of potassium has the power of dissolving chloride of silver. Of course a part of this silver is expectorated, but it is probable that a large part is absorbed. Zaleski, in order to find how much of a tube is dissolved in a given time, performed tracheotomy upon a cat, and inserted a silver biliary fistula tube, which remained in until the cat died, a month later. The tube lost in this time .0056 gram, or .282 per cent. of its weight. Thus it is seen that not only silver pessaries in the vagina or silver tubes in biliary or gastric fistulæ, but silver tracheotomy tubes in the trachea can be dissolved, the metallic silver being taken up by the fluids of the body.

Is this gradual wearing away of silver detrimental to the body, and to what extent? We know that the long continued and constant internal use of silver preparations in very small doses ultimately produces argyria, a grave and dangerous affection. The cases recorded by Orfila, Fromman, Riemer, and Dittrich, show that the manifestation of the deposition of silver in the tissues by the occurrence of a grey discoloration of the skin takes some time, but the actual deposition of the metal in the tissues begins much sooner, producing latent argyria, during which there is no discoloration, though, as experiments on animals show, the health is affected. If now a silver tube weighing 10 to 16 grams be used, if only half of it be absorbed by the tissues, we have the conditions for the production of argyria. Again, we cannot lose sight of the fact that the irritant action of the dissolved silver upon the delicate mucous membrane of the air-passages. There is still another danger if the patient and his attendants be so negligent that

the tube is not cleansed and examined. The destructive action of the secretions will go on until the tube is worn down to a mere film—and the patient's life is jeopardized by the likelihood that the intratracheal portion will break off and asphyxiate the patient.

Zaleski thinks that the most suitable materials for tracheotomy tubes are gold, platinum, rock crystal, porcelain, glass or ivory; though the gold and platinum may be dissolved to a certain extent after a time, especially by the sulphuretted hydrogen which is sure to exist if disinfection is imperfect.

EDITORIAL NOTES.

PUBLICATION OF MEDICAL CASES.—The proprietor of a private asylum for the insane at Besangon, was recently mulcted in 500 francs fine and 2,000 francs damages for publishing the clinical history of a patient under her initial letters, and in such a way that her identity was easily recognized. The judges held that a medical man has no right to divulge matters confided to him in the exercise of his professional duties in such a manner as to permit the public to ascertain the identity of the patients.

BRITISH MEDICAL ASSOCIATION.—An excellent programme is announced for the meeting of this Association in Glasgow on August 7, 8, 9, and 10. In the way of amusements there will be excursions to Lanark and Falls of Clyde, Ayr and the Land of Burns, the Perthshire Highlands, Lochearnhead and Crieff, Callander and the Trossachs, Arran, Stirling, Bridge of Allan, and Dunblane Castle, to Rothelsgate and the Kyles of Bate, and to Loch Lomond.

ENGLISH PHYSICIANS IN SWITZERLAND.—The Swiss government has partly rescinded the order that English and other physicians shall not practice in Switzerland without a Swiss diploma. This is a matter of importance, not only for Switzerland, but for those that are in the habit of visiting, whether for health or recreation, "the playground of Europe."

LONGEVITY IN JAPAN.—Japan had, on January 1st, 1888, 38,507,177 people. Of these 1,085,001 were between 70 and 80 years old; 247,055 between 80 and 90; 12,220 between 90 and 100, and 97 over 100 years. Of the last there were 73

women and 24 men, two of the women being 109, and one 111 years old.

JAMBUL.—DR. GEORGE SUTTIE, of Detroit, says in the *British Medical Journal*, that syzygium jambolana and Eugenia jambolana are the same. Jambul has been recommended in diabetes, and the proper name for it, says Dr. Suttie, is Eugenia jambolana.

SUBLIMATE INJECTIONS IN LUPUS.—In a recent number of the *Gazzetta degli Ospitali* Dr. TANSINI reports a case of lupus hypertrophicus cured after twelve injections of a .5 to 1 per cent. solutions of corrosive sublimate, which caused no local nor constitutional irritation.

THE KENTUCKY STATE MEDICAL SOCIETY will hold its thirty-ninth annual meeting at Crab Orchard Springs, July 11, 12, and 13, 1888. A full and interesting programme has been prepared.

THE LOMBARD UNIVERSITY of Galesburg, Ill., recently conferred the honorary degree of Master of Arts upon Dr. Homer M. Thomas, of this City.

DR. MARY DURAND, director of the *Courrier Médical*, has been appointed member of the Commission of Public Hygiene and Health of Paris.

THE SOCIETY OF OBSTETRICS AND GYNECOLOGY OF VIENNA has been recently formed, under the Presidency of Breisky.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, May, 23, 1888.

THE PRESIDENT, J. SOLIS COHEN, M.D.,
IN THE CHAIR.

DR. A. JACOBI, of New York, read a paper on
THERAPEUTICS OF DIPHTHERIA.

Diphtheria is a contagious disease. Severe forms may beget severe or mild forms. Mild cases may beget mild or severe cases. What has been called follicular amygdalitis (or "tonsilitis") is diphtheria in many, perhaps most, instances. It is seldom dangerous to the patient. But the diphtheritic variety of follicular amygdalitis also is contagious. This mild variety is that from which adults are apt to suffer. It made me proclaim the warning that there is as much diphtheria

out of doors as there is indoors; as much out of bed as in bed. With this variety the adult is in the street, in business, in the school-room, in the railroad car, in the kitchen and nursery. With this variety, parents while complaining of a slightly sore throat, kiss their children. Wherever it is suspected it ought to be looked after. Where it is seen it ought to be isolated and treated, less perhaps for the sake of those who are sick, than of those who are in serious danger of being infected. This is the more necessary as this form is apt to last long and give rise to repeated attacks. But it is not only the mild variety which is liable to last long. Serious, undoubted cases are also apt to last for weeks, and some of them months. As long as they do persist they are contagious.

Those sick with diphtheria, severe or mild, must be isolated. If barely possible, the other children ought to be removed from the house. This can but rarely be done in the homes of the poor, in the densely populated districts. A great charity is still waiting for its consummation, viz., that of erecting buildings, dormitories and playrooms for those who should be temporarily exiled from their infected homes. The erection of a sufficient number of temporary homes would be a still greater blessing to the poor, and a greater protection to the public at large. If it be impossible to send the well children away, let them remain outside the house, in the air, as long as feasible, and with open bedroom windows during the night, in the most distant part of the house; during the winter in a lower floor. Their throats must be examined every day, and their rectal temperatures taken by the mother so that the physician may be called on the occurrence of but slight changes. The few minutes spent in this way are amply repaid by the safety they may accomplish. The attendants upon cases of diphtheria must have no intercourse with the well children; though a brief visit of the physician may not render him sick or dangerous to others, a long exposure affects him or a nurse to a greater or less degree.

The well children of a family in which there is diphtheria must not go to school or church. Schools must be closed when a number of pupils have been attacked; or better still, when there is an epidemic, though it may not yet have affected the school children to a great extent; the teachers ought to be taught how to examine throats, and directed to do so every morning, and send home those children who are suspected.

When an attack of diphtheria has made its appearance the hygienic condition of the house should be examined. A family with children ought to insist upon the occasional inspection of the throats of their servants; those with chronic pharyngeal catarrh must not be hired. A seamstress or laundress coming for an occasional day's work, sick nurses, children's nurses, and cooks, should be examined from time to time, the more

so the more such people are inclined to conceal slight troubles, for obvious reasons. In times of an epidemic every public place, theatre, ball-room, dining-hall and tavern should be treated like a hospital. Where there is a large conflux of people there are certainly many who carry the disease. Disinfection ought to be enforced at regular intervals. In this respect I can but repeat what I said in my treatise (p. 172) and Pepper's *Cyclopædia* (I, 697). Public vehicles must be treated in the same manner after a suspicious case has been carried; that it should be so when a case of smallpox has happened to be conveyed in them appears quite natural. Livery stable keepers who would be anxious to destroy the germ of smallpox in their coaches must learn that diphtheria is as dangerous a passenger as variola, and what is correct in the case of a poor hack is more so in a railroad car, whether emigrant or Pullman.

To what extent the infecting substance may cling to surroundings is best shown by the cases of diphtheria springing up in premises that had not seen diphtheria for a long time, but had not been interfered with, and best, perhaps, by a series of observations of auto-infection. When a diphtheritic case has been in a room for some time, the room, bedding, curtains, and carpets, are infected. The child is getting better, has a new attack, may again improve, and is again stricken down. Thus I have seen them die; but also improve immediately after being removed from that room or house. If barely possible, a child with diphtheria ought to change its room and bed every few days.

To other rules of protection and disinfection, both private and public, including the prohibition of public funerals, I allude, only for the purpose of referring to the admirable rules published in its *Bulletin* No. 10, of Sept. 6, 1879, by the National board of health, and copied in my treatise on diphtheria, New York, 1880, and my article on diphtheria in Pepper's *System of Practical Medicine*, vol. i., p. 698.]

Diphtheria will, as a rule, not attack a healthy integument, be this cutis or mucous membrane. The best preventive is, therefore, to keep the mucous membrane in a healthy condition. Catarrh of the mouth, pharynx, and nose must be treated in time. Many a chronic nasal catarrh, with big glands around the neck, require sometimes but two or three regular salt water injections (1 : 130) into the nose, if the children be large enough to do so. The addition of one per cent. of alum will often be found useful. This treatment however must be continued for many months, and may require years. The nasal spray of a solution of nitrate of silver, 1 : 500 or 1000, will accelerate the cure. The internal administration of the tincture of *pimpinella saxifraga* is an efficient remedy in subacute and chronic pharyngitis and laryngitis. I generally give it

to adults, diluted with equal parts of glycerine and water, a teaspoonful of the mixture every two or three hours, with the proviso that no water must be taken soon after.

Large tonsils must be resected in times when there is no diphtheria. During an epidemic every wound in the mouth is liable to become diphtheritic within a day, and such operations should be postponed if feasible. Scooping of the tonsils, for whatever cause, I have given up since I became better acquainted with the use, under cocaine, of the galvano-cautery. From one to four applications to each side, or to the post-nasal space, are usually sufficient for every case of enlarged tonsils or lacunar amygdalitis. It is advisable to cauterize but one side at a time, to avoid inconvenience in swallowing afterward, and to burn from the surface inward. Cauterization of the center of the tonsils may result in swelling, pain, and suppuration, unless the cautery is carried entirely to the surface; that means to say the scurf must be on, or extend to, the surface. Another precaution is to apply the burner cold, and heat it *in situ*. Nasal catarrh and proliferation of the mucous and submucous tissue may require the same treatment, but in my experience the cases which require it, are less frequent than those in which the tonsils need correction.

The presence of glandular swellings around the neck must not be tolerated. They, and the oral and mucous membranes, affect each other mutually. Most of them could be avoided, if every eczema of the head and face, every stomatitis and rhinitis resulting from uncleanness, combustion, injury, or whatever cause were relieved at once. A careful supervision of that kind would prevent many a case of diphtheria, glandular suppuration, deformity or phthisis.

For its salutatory effect on the mucous membrane of the mouth, chlorate of potassium, or sodium, which is still claimed by some to be a specific, or almost so, is counted by me amongst the preventative remedies. If it be anything more, it is in a case of diphtheria an adjuvant. It exhibits its best effects in the catarrhal and ulcerous condition of the oral cavity. In diphtheria it keeps the mucous membrane in a healthy condition or restores it to health. Thus it prevents the diphtheritic process from spreading.

Diphtheria is seldom observed on healthy, or apparently healthy, tissue. The pseudo-membrane is mostly surrounded by a sore, hyperæmic, oedematous mucous membrane. Indeed, this hyperæmia precedes the appearance of the diphtheritic exudation in almost every case. Many cases of throat disease occurring during an epidemic of diphtheria, are but those of pharyngitis, which under favorable circumstances may develop into diphtheria. These throat diseases are so very frequent during the reign of an epidemic, that in my first paper on diphtheria (Aug. 11 and 18, 1860,

Amer. Med. Times) I based my reasoning on 200 cases of genuine diphtheria, and 185 of pharyngitis, without a visible membrane.

These cases of pharyngitis, and such of stomatitis and pharyngitis accompanying the presence of membranes, are benefited by the local and general effect of chlorate of potassium. The surrounding parts being healthy or returning to health, the membrane remains circumscribed. The generally benign character of purely tonsillar diphtheria, which is apt to run its full course in from four to six days, has in this manner contributed to secure to chlorate of potassium the reputation of being a ready, *the*, remedy in diphtheria. The dose of the salt must not be larger than 15 grains (1 gram) for an infant a year old, not over 20 or 30 (1.5-2.0) for a child from three to five years, in the twenty-four hours. An adult must not take more than 1½ drachms (6 grams) daily. These amounts must not be given in a few large doses, but in repeated doses and short intervals. A solution of one part in sixty will allow a teaspoonful every hour, or half a teaspoonful every half hour in the case of a baby one or two years old.

There is no better proof of the non-existence of a specific in diphtheria than the fact that the pharmacopœia has been exhausted to find one, and new remedies, legitimate and illegitimate, are being recommended all the time as panaceas. While there are certain indications resulting from the characteristics common to all, every case of diphtheria must be treated on general principles, which must be applied to the prominent individual features. When there is a high temperature in the beginning, it requires all the tact of a good physician to judge of the advisability of reducing it by antifebriles, such as sponging, warm bathing, cold bathing, antipyrin, antifebrin, or the subcutaneous use of the carbamide of quinia. Convulsions may demand active treatment, such as chloroform inhalations, or chloral hydrate, internally or in the rectum. Vomiting, or other cerebral symptoms, may ask for liquids, or smaller or larger doses of opiates. A very quick and feeble pulse may require a few large doses of a heart stimulant, digitalis, strophanthus, or spartein in the very beginning.

Renal complications are frequent and occur early. The majority of cases terminate favorably, in some a large amount of albumin will be eliminated in the course of a few days and disappear shortly. But whether your individual case will be of that nature, you do not know, and in time of danger nothing must be taken for granted. Milk or farinaceous diet, plenty of water, or, better, Poland, Bethesda, Seltzer, Apollinaris, or Vichy, warm bathing, warm feet, a few good doses of calomel, a number of hourly or two-hourly small doses of opium which are better than those of digitalis, and nitro-glycerine, will often

prove beneficial. If a diffuse nephritis, such as is more frequently met with in scarlatina, be the result it impairs the prognosis and requires further treatment conducted on general principles.

To what extent local treatment, if it be possible to employ it, is effective, can best be seen on external diphtheritic surfaces, thus the cutis denuded by vesicatories, the inguinal regions sore with intertrigo, the vagina, circumcision wounds, or tracheal incisions. For these conditions, I am most pleased with the effect of iodol, or iodoform powdered, or one part with eight or ten of vaseline. Powders of subnitrate of bismuth, boric acid, or salicylic acid with fifteen or twenty-five its quantity of starch have not given me the same satisfaction.

The treatment of diphtheritic conjunctivitis requires nothing but local treatment. It consists in the application of small ice-bags, or iced cloths which must be changed every few minutes, and the frequent installation of a saturated solution of boric acid, with or without atropia.

The local treatment of the pseudo-membranes of the fauces is a subject of great importance. To look upon them as an excretion which needs no interference, is incorrect. If it were possible to remove or destroy them, it would be a great comfort; but they can be reached only in certain places, and just in those in which they do least harm. Pseudo-membranes on the tonsils are the least dangerous, for their lymph communication with the rest of the body is very scanty. Thus almost all forms of tonsillar diphtheria are amongst the most benign, at least as long as the process does not extend. Most cases of the kind run their mild course in from five to seven days, and it is just these that have given rise to the many proposals of tearing, scratching, cauterizing, swabbing, brushing, and burning.

The fact is that neither the galvano-cautery nor carbolic acid, nor tannin and glycerine, nor perchloride or subsulphate of iron can be applied with leisure and accuracy to the very membrane alone except in the cases of very docile and very patient children. In almost every case the surrounding epithelium is getting scratched off or changed and thus the diphtheritic deposit will spread. Besides, the membrane of the tonsil is changed surface tissue, as it always is wherever the epithelium is pavement, and not deposited upon the mucous membranes from which it might be easily detached. Whatever is done must be accomplished without violence of any kind. If nasal injections be found advisable they can be made to wash the posterior pharynx and the tonsils sufficiently, so as to render the special treatment directed to the throat absolutely useless. Besides, it is easier, and meets with less objection, and gives rise to less exhaustion than the forcible opening of the mouth. Were it possible to make local applications without difficulty, the

membrane may be brushed with tincture of iodine several times daily, or a drop of rather concentrated carbolic acid. Of powders I know only one, the application of which is not contraindicated, viz. calomel. Even this may irritate by its very form. Everything dry irritates and gives rise to cough or discomfort. Whatever has, besides, a bad taste or odor, such as sulphur, iodoform, or quinia, must be abhorred.

For the purpose of dissolving membranes papayotin, or papain, has been employed. It is soluble in twenty parts of water, and may be injected sprayed, or brushed on. I have used it in greater concentration, in two or four parts of water and glycerine, in the nose, throat, and through the tracheotomy tube, in the trachea. For the same purpose trypsin is preferred by others. The mode of its application is the reverse of indifferent. I have seen papayotin applied in powder, which resulted in the constant irritation of the throat while the patient otherwise was convalescent. The pharyngeal hyperæmia and slight exudation disappeared when mild alum washes were substituted.

Steam. Its inhalation is useful in catarrh of the mucous membranes, and in many inflammatory and diphtheritic affections. On mucous membranes it will increase the secretion and liquefy it, and thus aid in the throwing off of the pseudo-membranes. Its action is the more pronounced the greater the amount of muciparous follicles under or alongside a cylindrical or fimbriated epithelium. Thus it is that tracheo-bronchial diphtheria, so-called fibrinous bronchitis, is greatly benefited by it. Children affected with it I have kept in small bath rooms for days, turning on the hot water, and obliging the patient constantly to breathe the hot clouds. Several such cases I have seen recover with that treatment. Atomized *cold* water will never yield the same result. Nor have I seen the patent inhalers do much good. Where the surface epithelium is pavement rather than cylindrical, and but few muciparous follicles are present, and the pseudo-membrane is rather immersed in, and firmly coherent with, the surface—for instance on the tonsils and the vocal cords—the steam treatment is less appropriate. Moist heat in such cases is likely to favor the extension of the process by softening the hitherto healthy mucous membrane. It takes all the tact of the practitioner to select the proper cases for the administration of steam, not to speak of the judgment required to determine to what extent the expulsion of air from the steam moistened room or tent is permissible.

Steam can properly be mixed with medical vapors. In the room of the patient water is kept boiling constantly, over the fire place, provided the steam is prevented from escaping directly into the chimney, on a stove (the modern self-feeders are insufficient for that purpose, and abomina-

tions for every reason), over an alcohol lamp if we cannot do better, not on gas if possible, because of the large amount of oxygen which it consumes. Every hour a teaspoonful of oleum terebinthinæ, and perhaps also a teaspoonful of carbolic acid, is poured on the water and evaporated. The air of the room is filled with steam and vapors, and the contact with the sore surfaces and the respiratory tract is obtained with absolute certainty.

The secretion of the mucous membranes is sometimes quite abundant under the influence of steam, but still, like that of the external integuments, increased by the introduction of water into the circulation. Therefore, drinking of large quantities of water, or water mixed with an alcoholic stimulant, must be encouraged. Over a thoroughly moistened mucous membrane the pseudo-membrane is more easily made to float, and macerate. It was for this purpose that pilocarpine, or jaborandi, was highly recommended. Guttman recommended it as a panacea in all forms of diphtheria. There is no doubt that the secretion of the mucous membrane is vastly increased by its internal application, and by repeated subcutaneous injections of the muriate or nitrate of the alkaloid, but the heart is enfeebled by its use. I have seen but few cases in which I could continue the treatment for a sufficient time. In many I had to stop it because after some days of persistent administration I feared for the safety of the patients. There will be but exceptional cases in which pilocarpine will be tolerated long enough to do good. It is one of the remedies by which we may cure our case and kill our patient.

Diphtheria of the nose is apt to terminate fatally unless energetic treatment is commenced at once.

This consists in persevering disinfection of the mucous surface. The disinfecting procedure must not be omitted long because of the general sepsis resulting from rapid absorption from the surface which is supplied with lymph ducts, and small superficial bloodvessels to an unusual extent. Disinfectant injections must be continued every hour, for one or more days. If they are well made, the consecutive adenitis, particularly that about the angles of the lower jaw, is soon relieved and the general condition improved. But there are cases in which not the lymph bodies are the main gates through which constitutional poisoning takes place, but the bloodvessels only. In the incipient stage of such cases the discharge from the nostrils is more or less sanguineous; in them the bloodvessels, thin and fragile, carry the poison inward with great rapidity.

Injectons are unsuccessful in cases in which the whole nasal cavity is filled with membranous deposits to such an extent as to require forcible treatment. Sometimes it is difficult to push a silver probe through it. That procedure may be re-

peated, the probe dipped in carbolic acid, or wrapped in absorbent cotton moistened with carbolic acid of 50 or 90 per cent. After a while injections alone will suffice. But now and then the development of pseudo-membranes is very rapid, a few hours suffice to block the nostrils again, and the difficulty is the same.

The liquids to be injected must be warm and fairly mild. Solutions of chloride of sodium, 0.66 per cent., saturated solutions of boric acid, 1 part of water, more or less, or lime water, or solutions of papayotin, will be found satisfactory. The object in view is partly that of washing out, and partly of disinfecting. Carbolic acid may be used in solutions of 1 per cent. or less. Its use requires care, for much of the injected fluid is swallowed, and proves a danger to children of any age, but mostly to the young.

The nozzle of the syringe must be large, blunt and soft. I now use always a short stout glass syringe with soft rubber mounting in front.

When the children cannot or must not be raised, I employ the same solutions from a spoon, or a plain Davidson atomizer. These applications can be made while the children are lying down, every hour or very much oftener, without any or much annoyance. The nozzle must be large so as to fit the nostril. A single spray on each side will generally suffice. I am in the habit of covering the common nozzle with a short piece of India-rubber tubing.

For a day or two these injections of fluids or spray must be made hourly. It is not cruel to wake the children out of their septic drowsiness; it is certain death not to do it.

Injections of the nose are oftener ordered than judiciously made. Hundreds of times have I been assured that they had been made regularly, hourly, for days in succession. Still there was a steady increase of glandular swelling and sepsis. I never believe a nurse to have made them regularly unless I have seen her doing it. They *will* run up their syringe vertically and not horizontally, the fluid *will* return though the same nostril. On the successful injecting or spraying of the nares hangs every life in a case of nasal diphtheria. I have long learned to look upon a neglect to tell at every visit how to make an injection as a dereliction of duty. This may appear a trifling way, but it is a safe one. The nurse must be made to tell you that at every injection the fluid returns through the other nostril, or through the mouth, or is swallowed. The procedure is simple enough, and need not take more than half a minute for both nostrils. A towel is thrown over the child's chest up to the chin and the child gently raised in bed by the person who is to make the injection. This person, sitting on the bed, steadies the patient's head against her chest while somebody else holds the patient's hands. The

syringe is introduced horizontally by the person sitting behind the patient and gently emptied. No time must be lost in refilling and attending to the other side. When pain is complained of in the ears more gentleness is required, or the spray, or pouring in from a spoon, or minim dropper even, has to take the place of the injection. Many sins are committed in even doing this simple thing. The unfortunate little one is made to see all the preparations and is worried and excited, and the necessary gentleness in the proceedings is neglected.

Which is the concentration in which antiseptic injections should be used? For twenty-five years and more, while employing irrigations and injections frequently, I had used quite weak solutions and felt assured of their efficacy. In the *American Journal of the Medical Sciences* for January, 1881, T. Mitchell Prudden proved that a solution of $\frac{1}{16}$ of 1-per cent. of carbolic acid prevents the emigration of white blood-corpuscles under circumstances otherwise favorable to inflammation, and Koch found that, though bacteria are not easily killed, their growth is stopped by a solution of 1 part of carbolic acid in 850, and their activity by one in 1,200. These effects are all that is required for practical purposes; thus the frequency of applications is justified by both necessity and safety.

Diphtheritic adenitis, the swelling of the cervical glands near the angles of the lower jaw, to which I have alluded as an ominous symptom, points to nasal and naso-pharyngeal infection. The treatment consists in disinfection of the absorbing surfaces. Direct local treatment of the glands, if not entirely useless, is, at all events, of minor importance and efficiency. Applications of 1 part of carbolic acid to 10 of alcohol irritate both surface and patient more than they can do good. Inunctions may do some good by friction (massage); inunctions with some absorbable material in them may do a little better. After all, however, the readiest method of reducing the swelling of the glands and improving the prognosis accordingly, is that of cleansing and disinfecting the field of absorption. The rare cases of suppuration in these glands require incision and disinfection. They are as ominous as rare, however. There is but little pus, as a rule, but one or many local deposits of disintegrated gland cells and gangrenous connective tissue. The incisions must be extensive, the scoop and concentrated carbolic acid must be freely used. In these cases hæmorrhages may occur, some of them very difficult to manage. I have seen some of them terminate fatally. In these carbolic acid must be avoided. Compression, actual cautery, and acupressure, have rendered good service. Solutions of iron must be avoided, for the scurf formed is a shield behind which deleterious absorption is going on constantly in such wounds, as it does in the uterus.

Besides sepsis, the great dangers in diphtheria are heart-failure and strangulation. The latter has its own indication, to which I shall not now allude. Heart-failure exhibits itself sometimes quite suddenly, but, as a rule, it is foreshadowed by a gradually increasing frequency, weakness of heart-beats and pulse and the equal length of the intervals between the feeble systole and diastole, and diastole and systole. This equality is always a dangerous symptom. Heart-failure is due, besides the influences common to every disease and every fever, to myocardial changes. These may depend on the influence of the septic decomposition of the blood, and the ill nutrition of the heart-muscle depending thereon, or the direct diphtheritic changes of the tissue, or both. These changes and dangers set in, sometimes, at a very early period. Thus whatever enfeebls must be avoided. Patients must be spared every unnecessary activity. They must remain in bed, without excitement of any kind, take their meals, and evacuate their bowels in a recumbent or semi-recumbent position; crying and worrying must be avoided; the room kept airy, and rather dark, so as to encourage sleep if the patient be restless. In no disease, except, perhaps, in pneumonia, have I seen more fatal results from sudden changes of posture, or from exertion. Unless absolute rest be enforced, neither physician nor nurse has done his or her duty.

In no disease is the danger greater from the side of the heart, in no disease is the indication for sustaining and strengthening the heart more positive from the very beginning. Digitalis, strophanthus, spartein, besides camphor, alcohol, and musk, must not be postponed until feebleness and collapse have set in. It is possible or probable that they will appear; and it is certain that a cardiac stimulant will do no harm. It is safe, and advisable to use them at an early date. That is particularly necessary when antipyrin or antifebrin is given. A few grains of digitalis, in a palatable and digestible form, may, or must, be given daily. When a speedy effect is required, one or two doses of from two to four grains are not too large, and must be followed by smaller ones. When it is justly feared that the effect of digitalis may be too slow, I give, with or without the former, sulphate of spartein. An infant a year old will take one-tenth of a grain four times a day, as a matter of precaution, and every hour or every two hours in an emergency.

Of at least the same importance as cardiac tonics are alcoholic stimulants. The advice to wait for positive symptoms of heart failure and collapse before the life-saving apparatus is employed, is bad. There are cases that get well without treatment, but we do not know beforehand which they will be. No alleged mild case is safe until it has recovered. When heart failure sets in—and often it will occur in apparently mild

cases—our efforts are too often in vain. Thus alcoholic stimulants ought to be given early, and in large quantities, though amply diluted. There is no such thing as intoxication or danger from it, in septic diseases. A few ounces daily may suffice, but I have seen ten ounces of brandy or whisky, save children who had done badly with three and four. Coffee is a good stimulant for the heart. Camphor may be employed to great advantage for the same purpose. From 5 to 25 grs. may be given daily, as camphor water, or in a mucilaginous emulsion, which is easily taken. It does not upset the stomach as ammonium carbonate is liable to do. It may be employed subcutaneously when a rapid effect is aimed at, in five parts of oil, which is milder and more convenient than ether.

But the best internal stimulant, in urgent cases, is Siberian musk, in powders, or with mucilage. When required at all it should be given in sufficient doses, and at short intervals. When ten or fifteen grains administered to a child one or two years old, will not accomplish, within three or four hours, a return of a more satisfactory heart's action; the prognosis is very bad.

Besides exhaustion at the height of the disease, we have paralysis during convalescence, or intense anæmia long after apparent recovery. This anæmia may be general, or is local, and then mostly cerebral. Diphtheritic paralysis, though of different anatomical and histological origin, yields in all cases a certain number of identical therapeutical indications. These are: The sustaining of the strength of the heart by digitalis and other cardiac tonics. A child of 3 years may take daily, for a month, 3 grains or its equivalent; for instance, 1 grain of the extract. This is an indication on which I cannot dwell too much. Many of the acute, and most of the chronic diseases of all ages, do very much better by adding to other medications a regular dose of a cardiac tonic. It is true that it is a good practice to follow the golden rule to prescribe simply, and if possible, a single remedy only, but a better one to prescribe efficiently. A prescription paper with a single line on it looks well, but a really convalescent or well man, looks better.

There are some more indications: Mild preparations of iron, provided the digestive organs are not interfered with. Strychnia or other preparations of nux at all events. In ordinary cases a child of 3 years will take $\frac{1}{10}$ of a grain three or four times a day. Local friction, massage of the throat, of the extremities, and trunk, dry or with hot water, or oil, or water and alcohol; and the use of both the interrupted and continuous currents, according to the known rules, and the locality of the suffering parts, find their ready indications. The paralysis of the respiratory muscles is quite dangerous; the apnoea resulting from it may prove fatal in a short time. In such cases the electrical current used for very short periods,

but very frequently, and hypodermatic injections of sulphate of strychnia in more than text-book doses, and frequently repeated, will render good service. I remember a case in which these, and the occasional use of an interrupted current, and occasional artificial respiration by Silvester's method, persevered in for the better part of three days, proved effective.

Chloride of Iron.—The chloride of iron is an astringent and antiseptic. Its contact with the diseased surface is as important as is its general effect therefore it must be given frequently, in hourly or half hourly doses, even every twenty or fifteen minutes. An infant of 1 year may take 3 or 4 grams a day, a child of 3 or 5 years 8 or 12. It must be mixed with water to such an extent, that the dose is half or a teaspoonful; $\frac{5j}{\text{in}} \text{ in } \frac{3iv}{\text{in}}$ allows half a teaspoonful every twenty minutes. No water must be drunk after the medicine. As a rule it is well tolerated. There are some, however, who will not bear it well. Vomiting or diarrhoea is a contraindication to preserving in its use, for nothing must be allowed to occur that reduces strength and vigor. A good adjuvant is glycerine, better than syrups. From 10 to 15 per cent. of the mixture may consist of it. Now and then, but rarely, it is not well tolerated neither. When diarrhoea sets in glycerine must be discontinued. Still these cases are rare; indeed, the stomach bears glycerine very much better than the rectum. In the latter, the presence of a small dose of glycerine is known sometimes to produce large evacuation, a result appropriated and utilized by an advertising nostrum monger.

I have seen so many bad cases to recover with chloride of iron, when treated after the method detailed above, that I cannot rescind former expressions of my belief in its value. Still, I have often been so situated that I had to give it up in peculiar cases. These are such in which the main symptoms are those of intense sepsis, I should say such in which the iron and other rational treatment was not powerful enough to prevent the rapid progress of the disease. Children with naso-pharyngeal diphtheria, large glandular swelling, feeble heart and frequent pulse, thorough sepsis, and irritable stomach besides, those in which large doses only of stimulants, general and cardiac, can possibly promise any relief, are better off without the iron. When the circumstances are such as to leave the choice between iron and alcohol, it is best to omit the iron and rely on stimulants mostly. The quantities required are so great that the absorbent powers of the stomach are no longer sufficient for both. Nor is iron sufficient or safe in those cases that are preëminently laryngeal. To rely on iron in membranous croup means waste and danger.

Mercury.—The first volume of *A System of Practical Medicine by American Authors*, which appeared in 1885, contains in an article on

diphtheria, written in 1884, the following remarks:

"If ever mercury is expected to do any good in cases of suffocation by membrane, it must be made to act promptly. Within the past few years the internal administration of bichloride of mercury has been resorted to more frequently and with greater success than ever before. My own experience with it has been encouraging, and so has that of some of my friends. Wm. Pepper gave one thirty-second of a grain of corrosive sublimate every two hours in bad form of diphtheritic croup, with a favorable result. But in this very bad case, desperate though it was—child of 5 years, respiration 70, pulse 160—large membrane 'evidently from the larynx' had been expelled before the treatment was commenced on the seventh day of the disease. The solution ought to be given in solution of 1:5000 and in good doses. A baby, a year old, may take one-half grain every day many days in succession, with very little, if any, intestinal disorder, and with no stomatitis: A solution of the corrosive sublimate in water is frequently employed of late as a disinfectant. It acts as such in a dilution of 1 in 20,000. As healthy mucous membrane bear quite well a proportion of 1:2000 or 3000, any strength between these extremes may be utilized. A grain of the sublimate in a pint or more of water, with a dram of table salt, will be found both mild and efficient. As a gargle and nasal injection it will be found equally good. But it has appeared to me that frequent applications give rise to a copious mucous discharge; hourly injections into a diphtheritic vagina become quite obnoxious by such over-secretion, which ceases at once when the injections are discontinued. Thus, when it is desirable not only to disinfect, but also to heal the diseased surface, the injections with corrosive sublimate appear to yield a result inferior to less irritating applications."

These remarks of 1884 constitute what I consider a great progress over the statements of my treatise on diphtheria, 1880, which are more cautious and negative. I am fully prepared to commit myself to the following statements: My conviction of the utter uselessness of internal medication in laryngeal diphtheria, membranous croup, is strongly shaken. The mortality of 90 or 95 per cent. of the cases not operated upon has no longer existed these five or six years, in my observation. The above figures were by no means taken from small numbers. For since 1860 I have tracheotomized more than 500, perhaps 600, times, have assisted in as many more operations, and seen at least a thousand cases of membranous croup that were not operated upon at all. During the last six years I have seen no less than 200 cases, perhaps many more. Amongst them, recoveries have not been rare. In the practice of O'Dwyer, I have seen two cases of general and laryngeal diphtheria in the same family get well

without any operative procedure. Such recoveries have taken place in all ages, from four months upward. The uniform internal medication consisted in the administration of the bichloride of mercury. The smallest daily dose was a gr. 0.25 (15 millig.) Grain 0.5 daily continued through 5 or 6, sometimes 8, 10, or even 12 days, has not been rare amongst children of from 3 to 6 years. the doses varied from gr. $\frac{1}{80}$ to $\frac{1}{40}$, and sometimes more. They are given every hour. They require the dilution in a tablespoonful of water, or other compatible fluid, for instance milk, in order to be quite innocuous. They are not liable to produce gastric or intestinal irritation. When the latter occurred, it was generally found that by some mistake the solution was as strong as 1:2000 or 1:3000. In the few cases in which it did exist, or was believed to result from the remedy, a few minims of camphorated tincture of opium administered with every dose, for a short period, proved sufficient to check it. The beneficial effect of the remedy depends greatly on the time of its administration. As a rule, such complete stenosis as necessitates surgical interference, develops after days only. This necessity is often obviated by the remedy when given as detailed. When an operation is required after all, the treatment must be continued. I have never since 1863 seen so many cases of tracheotomy getting well as between 1882 and 1886, when the bichloride was constantly used as mentioned. Nor am I alone with these observations. I can name a dozen of New York physicians, some of whom have often performed tracheotomy, who can confirm the above statements from their own observations. Nor does the opinion of those differ who constantly perform intubation. I know that O'Dwyer, Dillon Brown, and Huber have come to the same conclusions, the last having been a successful tracheotomist before he earned his laurels with intubation.

My experience in regard to the efficacy of the bichloride of mercury is mainly gathered in cases of fibrinous bronchitis. It is there where it has been particularly effective. Still I must not say that they were localized affections. These, with us, are but very scarce. Our cases of diphtheritic laryngitis are mostly decreasing, and complicated with either diphtheritic pharyngitis, or rhinitis, or both. Not a few, mainly of the latter kind, exhibit constitutional symptoms, sepsis. But cases of that kind also I have seen getting well. After the rational and careful administration of solutions of hydrogyrum bichloride, local mercurial symptoms about gums, mouth, pharynx, and intestines are extraordinarily rare in infancy and childhood.

(To be concluded.)

THE DEATH OF DR. J. MILNER FOTHERGILL is announced. Probably few men were more widely known among English-reading physicians.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

*Antipyrin Injections in Ocular Therapeutics—
Contra-Indications of Antipyrin—Saccharin—
Treatment of White Swelling by Electricity.*

At a recent meeting of the Academy of Medicine, Dr. Grandelément, of Lyons, read a paper on the utility and the principal indications of *injections of antipyrin in ocular therapeutics*. He found that injections of antipyrin in the temple produced results more rapid and more certain than the administration of this substance by the stomach. It was only in exceptional cases that the author had occasion to associate the two modes of absorption.

Secondly we noticed, that when the injections should be useful and efficacious, improvement takes place from the first injection, in that case four or five injections ordinarily suffice to obtain all that can be expected of this substance. Dr. Grandelément stated that he had thus practiced more than 300 injections, in doses of 25 centigrams of antipyrin in 10 drops of distilled water with half a centigram of antipyrin in 10 drops of distilled water with half a centigram of the hydrochlorate of cocaine. The author never observed any abscess resulting, but there has always been produced in the injected region a slight swelling which lasted from six to eight days, and extended at times in the form of œdema to the lower lid. He thought that when the injections were efficacious, a good part of this efficacy is probably due to a sort of subcutaneous revulsion with analgesia of the skin at the part injected. The author concludes his paper with the following indications for these injections: 1. When pain is the principal element, particularly when it is not peri-orbital. 2. When the spasmodic element exists. 3. These injections favorably modify the greater part of the inflammatory processes of the globe of the eye, particularly if they are accompanied by ciliary pains. Moreover, their favorable action on the progress of the inflammation is the more evident in proportion as the pain is more acute.

At a discussion on the medicinal properties of antipyrin, Dr. Huchard brought to notice, at a recent meeting of the Société de Thérapeutique, the contra-indications of that substance, which is so much in vogue. He said that the drug should be used sparingly in diseases such as typhoid fever, in which the kidneys served as emunctories, as it diminished the secretion of urine. With this effect in view, he gave 8 grams a day to a woman suffering from meningo-myelitis, who passed from 24 to 28 litres in 24 hours. This quantity was reduced to 5 litres under the influence of antipyrin. The author, therefore, suggested the use of this drug in analogous cases,

such as diabetes, for instance. When the kidneys are, however, diseased, antipyrin should no more be given than opium or the salicylate of soda, as in such cases, these substances being eliminated by the kidneys, might possibly be absorbed into the organism with toxic effects. Dr. Dujardin-Beaumetz and others confirmed this view, and related cases in which the urine of diabetic patients was notably diminished under the influence of antipyrin and a corresponding diminution of the sugar took place. As antipyrin sometimes causes disturbance of the stomach, Dr. Constantin Paul recommended the addition to it of the bicarbonate of soda. To the contra-indications, Dr. Huchard added that arterio-sclerosis should not be treated by antipyrin even when the kidneys are not affected. Some medical men thought that they had found in antipyrin a powerful hæmostatic, but after experimenting with it they found that it acted as such only when externally employed. In this latter case it proved most efficacious, and it was found that it also possessed most powerful antiseptic properties. It may be used in the form of a solution 1 to 20 parts or in powder, when it also relieves pain.

Saccharine is another substance that is becoming much in vogue, although for the present it is not much used as a medicinal agent. At a debate at the Société de Thérapeutique, Dr. Dujardin-Beaumetz extolled the advantages of this substance as a substitute for sugar in the alimentation of diabetic patients. The author stated that from his experience it was very much appreciated by these patients, as with it they enjoyed the sweet savor of sugar without having any of the inconveniences of the latter. It is preferred to glycerine, which has hitherto been the substitute for sugar. Some of the members present remarked that its use was being largely extended to industrial purposes, such as the manufacture of preserves and syrups for which glucose, often of an inferior quality, is employed. Dr. Dujardin-Beaumetz, however, thought that saccharin may safely be employed, as it had no noxious action on the system, but that nevertheless it is not, like sugar, an aliment, as it traverses the economy and is eliminated by the urine without being assimilated or transformed.

In a very interesting work by Dr. Léon Dannon on the *Treatment of White Swelling by Electricity*, the author summarizes as follows his conclusions on this mode of treatment which he has adapted for several years: 1. The results obtained till now by electricity applied to white tumors in full evolution, with or without fistulous tracts, show: (a) that it can arrest its progress; (b) that it can determine a regression of the fungous development; (c) that the part comprised might recuperate at least partially and sometimes to a great extent its integrity and its functions. 2. Although one can always gainsay the sense of

the ulterior evolution of an arthropathy, the power of electricity to check the progress of a white swelling at its origin seems undeniable. In any case the excellent effects produced by it in arthritis, whatever be its origin, it should be employed as a preventive means to all arthropathies in general, or at least to those of a suspicious nature. 3. The therapeutic power of electricity is due to its special antiphlogistic and entrophic property, that it acquires from the intimate relation which exists between the human electro-geny and the nervous function. A. B.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Ozon Treatment of Phthisis—Disposal of Sewage—Saline Aperients and Diet in Dysentery—Electrolysis in Gynecological Practice—Death of Dr. T. Harrington Tuke—Sir Andrew Clark.

The following was the experience of a well known medical man with the new remedy ozone, for consumption. The patient was a young lady far advanced in the disease. The symptoms were a hacking cough, almost entire loss of appetite and sleep, and not strength enough to walk across the room. Before using the remedy, the case was described to Dr. B. W. Richardson, who in the kindest manner advised as to the strength and duration of the inhalations. The oxygen was obtained from chlorate of potash in the ordinary way. In converting it into ozone the method was that recommended by Dr. Richardson, in which the proportion of ozone to atmospheric air was one in five, and this quantity was indicated by a divided scale on the side of a small gasometer which served for the inhaler. The patient had been under treatment for a month, and to quote the words of the medical attendant, "The effect was marvellous." The appetite is gained, the sleep calm and refreshing and altogether there seemed a very good prospect of recovery. It was anticipated that the inhalations would be followed by feverishness, or at least by an increase of temperature, but strange to say the clinical thermometer registered on the average 1.5° F. lower after the inhalations, which lasted fifteen minutes each. Dr. W. B. Richardson considers the ozone treatment as especially applicable to all germ diseases.

There has just been published as one of the "Professional Papers of the Corps of Royal Engineers" an interesting contribution to the important problem of how to dispose of the sewage of great towns. The treatment is alleged to occasion at once a chemical change by which the putrescible matter is destroyed as such matter and resolved into innocuous elements, and it is further alleged that this complete annihilation of dangerous products may take place either in the

public sewers or in each house without any change in the existing system of drainage and at trivial expense. The discovery is based upon the well known fact that water filtered through finely divided iron is purified. On the basis of these facts there was carried out a series of experiments whose result is the present discovery. There is produced by various chemical processes a liquid solution of iron of fixed strength. This iron liquor is introduced into the sewage in a quantity proportionate to the amount of putrescible matters believed to be present there, and the assertion is that it immediately dissolves these matters into their elements and that the fluid in the drain becomes clear water. For the purification of sewers the plan adopted is to place the iron liquor in a perforated porcelain cylinder, which is placed in a tank that receives a regulated supply of pure water. The iron liquor in the cylinder is taken up by the pure water at a known and easily calculable rate and thus charged with iron; the water escapes by an overflow pipe into the sewer.

In the town of Guildford, a ten-gallon tank was fixed and supplied with water from the town water-works, at the rate of fifteen gallons per hour. The disinfectant was placed in the tank and an overflow pipe was led from it into the adjacent sewer. The rate of solution was about 1,400 grs. of sulphate per hour. The apparatus was set at work at 2.40 per hour on Nov. 18, 1885. It was anticipated that several days would elapse before any decided change took place in the purity of the sewage and samples were taken every twelve hours. On the 19th of November, to the surprise of every one concerned, a clear stream free from any taint, was seen in rising from the outfall, and the smell which had been extremely offensive, had cleared. It is not concluded that this clear water is fit for the purposes that clear water is usually applied to, but it is alleged to be quite innocuous and to effect no perceptible change in the water of the rivers into which it may run. For the application to single houses the process requires only one or more small instruments which the inventor calls ferrometers and each of which will contain three pounds of iron solution, whose use can be regulated by simple working parts. The cost of the treatment is said to be very slight as compared to those now in use. Ferrometers have been adopted at Windsor Castle and are stated to be giving entire satisfaction.

Surgeon Nichols, of the Army medical staff, recommends a prolonged course of saline aperients, along with a nutritious, easily digested diet, in cases of chronic dysentery and its allies. In cases where the chronic is a sequel to a more or less recent acute attack, the disease is more obstinate and the treatment requires to be persevered in long after apparent recovery.

Dr. W. G. Steavenson, the well-known physician

of St. Bartholomew's Hospital, read a paper before the Obstetrical Society, devoted to advocating a more exclusive use of electrolysis in gynaecological practice. He pointed out that this property of electricity was especially useful in the treatment of affections in parts difficult of access, and perhaps found its widest field for usefulness in the treatment of those diseases of women in which local applications were necessary. It was a more efficient and elegant way of applying caustic than any other. It could be most accurately localized, the amount used and the extent of tissue to be destroyed could be regulated, and the action could be commenced and arrested at any moment at the will of the operator.

Dr. T. Harrington Tuke, the well-known authority on insanity and general diseases of the brain, died on the 9th of last month. He was a member of several professional societies, and was formerly well known at the annual meetings of the British Medical Association.

Sir Andrew Clark is reported to have once made the remark: "I worked twelve years for bread, twelve years for butter, and twelve more for the luxuries of life." Sir Andrew, the other day, received a fee of £5,000 for going to Italy. Sir Andrew Clark's first acquaintance with Mr. Gladstone arose in connection with his visits as Mr. Clark to Mr. Gladstone's Convalescent Home, since when they have been great personal friends. He is stated to have been one of the first to adopt the now general plan of writing out elaborate dietaries for his patients.

G. O. M.

DOMESTIC CORRESPONDENCE.

MONUMENTS TO MEDICAL PATRIOTS.

Dear Sir: The members of the profession of medicine in the United States will do well to read the following paragraph from the London *Lancet* of May 12:

"At Milan on the 30th ult., a statue in bronze, the work of the great sculptor, Vela, was erected to AGOSTINO BERTANI, who as surgeon, medical legislator, and patriot deserved so well of Italy. Statesmen of every political school were present at the ceremony, and the Syndic of Milan, the Senator Negri, dwelt in a strain of hearty unaffected eloquence on the high aims, the pure philanthropy, and the scientific grasp of the man they commemorated. To sacrifice a brilliant professional career in order to act as medical head to the army of independence under Garibaldi; to keep abreast of the professional scholarship and practice of the day while tending the sick and wounded of the Italian 'Risorgiments'; to dedicate the evening of a stormy existence to the moulding and maturing of a great body of sani-

tary regulations tending to lighten and lengthen the lives which he helped to civic freedom—such was the peculiar merit of Bertani. He lived just long enough to complete his Hygienic Code, bequeathing the exposition and indication of its articles to his political friends; and it was a happy coincidence that scarcely was Vela's fine presentation of his stoic figure and keenly intellectual countenance unveiled when the Italian Senate put its seal of approval to his 'Codice Sanitario.'"

Nor is this the only honor shown the name of the surgeon and sanitarian of the Italian Revolution. According to the *Lancet* of May 19, "A tablet has just been unveiled to his memory on the façade of that house in Genoa where he planned and set in motion the most brilliant of all Garibaldi's expeditions—that of the "Mille" or "Thomard," which added the two Societies to Italian unity. The following is a translation of the inscription: "Agostino Bertani, exile in Genoa from Lombardy, lived here nobly employed in the advancement of science and in the service of patriotism from 1853 to 1866. True to all the high-souled undertakings whence the new Italy took breath and form, in this house he endued with life and impulse, and from this house he launched the memorable organizing committee which aroused and inspired the armed thousand on their path of progress, with Garibaldi for their leader, from Marsala to the Volturro. Sacred be the walls in which so great a history resides."

Since Italy has so promptly and conspicuously honored its patriot physician, it appears anything but creditable that American medical men should hesitate to carry into effect, without another year of delay, the projected monument to that greatest of patriot physicians, BENJAMIN RUSH.

In my recent report to the American Medical Association, as Chairman of the Rush Monument Committee, published in *THE JOURNAL* of June 2, I quoted the example of the State Medical Society of California, which, at its annual meeting on the 18th of April, having taken a recess for the purpose, contributed \$106 toward the monument, that sum being the equivalent of the number of members in attendance. I was disappointed that the twelve hundred and more members of the American Medical Association in attendance at Cincinnati did not likewise contribute \$1200 to the project which the Association has so often commended and endorsed; and I now beg most earnestly to renew the appeal made in that report that every medical man and woman, on reading this statement, will at once inclose his and her subscription to the Treasurer of the Monument Fund, Dr. Joseph M. Toner, at 615 Louisiana Avenue, Washington, D. C., and that every one so doing will further personally interest himself, and herself, in obtaining a similar subscription from each friend and acquaintance in the ranks of the profession in his or her neighborhood.

The Committee have entertained the hope that the *one hundred thousand* members of the profession of Medicine in the United States would contribute *at least* \$50,000 towards erecting a monument to this "greatest American physician" who has ever lived, on the Mall at Washington at the approach to the new Army Medical Library and Museum, which would be worthy of the man commemorated, in keeping with the splendid medical edifice there erected, and creditable to the profession in America. The Congress of the United States will, undoubtedly, as in other instances, contribute a handsome pedestal for the monument, and it will be a subject of mortification, instead of pride, if the figure surmounting it should be an insignificant one through the negligence or indifference of the physicians of the country. I beg, therefore, on behalf of the committee to make this last appeal to every reader of *THE JOURNAL* to mail *at once* his one dollar subscription, or his larger donation, to the Treasurer and to actively interest himself in obtaining a similar subscription or donation from all his professional neighbors and acquaintances.

Very respectfully, etc.,

ALBERT L. GIBON, M.D.,

Chairman of Rush Monument Committee.

ACUTE RHEUMATISM IN A CHILD TWO MONTHS OLD.

Dear Sir:—In a recent issue of *THE JOURNAL* I notice the report of a case of acute rheumatism seen in a child only 11 days old.

This calls to mind a case that I saw during the month of April of this year—the child being *two months* old. I mistook the complaint, the first thirty-six hours, as being one of intestinal trouble, and so attributed the child's crying and fret to that cause. On a subsequent (third) visit, my attention was called to the child's swollen and red left shoulder, and that it would not permit the slightest movement of that arm without crying. Of course there was a complete change in the treatment. I had the arm and side bathed freely several times a day with wintergreen oil, preferring to give the salicylic acid in that form. The little patient showed signs of improvement in twenty-four hours, combined with an internal alkaline treatment, and $\frac{1}{2}$ -drop doses of the tincture of aconite root. The swelling attacked, as it left the shoulder, both wrists, and the hands looked like miniature puff-balls, though the fever and pain steadily lessened until, by the end of four days more, the patient was discharged.

This is the only case of rheumatism that I have seen in a patient under 1 year of age; neither have I heard of one, from my *confères*, in an infant so young. Yours very truly,

C. HENRI LEONARD, M.D.

Detroit, Mich., June 20, 1888.

BOOK REVIEWS.

LESIONS OF THE VAGINA AND PELVIC FLOOR, with special reference to Uterine and Vaginal Prolapse. By B. E. HADRA, M.D., of Austin, Texas. With 83 illustrations. 8vo, pp. 329. Philadelphia: Records, McMullin & Co. Chicago: W. T. Keener.

This volume may be regarded as a sort of companion to Croom's "Minor Gynecological Operations," edited by Dr. McMurtry. It is a carefully written account of the lesions of the vagina and pelvic floor, embodying and representing the best teachings of the present day, though the work is by no means a mere compilation. The author writes with the conviction of experience, and in a pleasing style.

It may be mentioned that in speaking of the prevention of lesions of the vagina and pelvic floor Dr. Hadra says that one of the points in the prevention of them is *asepsis*. "At least asepsis of hands and instruments we should expect of doctors and midwives, and the neglect of such precautions should be considered criminal before every judicial court of our country." From this the reader would at once suspect that the author is in favor of immediate treatment of lesions acquired during parturition, since this is almost a corollary to antiseptic or aseptic midwifery. And on the next page the author says: "The great frequency and importance of lesions in these parts should cause the profession to adopt" the immediate treatment of lesions acquired in parturition. "A moderate percentage of failures should not deprive the woman of the benefit of the doubt."

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES; A Yearly Report of the Progress of General Sanitary Sciences throughout the World. Edited by CHARLES E. SAJOUS, M.D., etc., of Philadelphia, and Seventy Associate Editors, assisted by over two hundred corresponding editors, collaborators and correspondents. Illustrated with Chromo-lithographs, Engravings, and Maps. Series of 1888. Vols. V. Vol. I, 8vo, pp. xv-541. Philadelphia and London: F. A. Davis, Publisher. 1888.

The first volume of this series opens with a paper on "Diseases of the Brain and Spinal Cord," by Dr. E. C. Seguin, of New York, covering 111 pages. Drs. Charles K. Mills and J. Hendrie Lloyd, of Philadelphia, contribute the paper on "Peripheral Nervous Diseases and General Neuroses," which is illustrated by a map showing the geographical distribution of Beri-beri. Some of the "Diseases of the Heart and Pericardium" are discussed by Dr. A. L. Loomis. Dr. James C. Wilson, in his usual clear style, writes of "Fevers," Dr. Wm. H. Thompson of "Diseases

of the Mouth, Stomach, Pancreas and Liver," Dr. W. W. Johnston of "Diseases of the Intestines and Peritoneum," Dr. Joseph Leidy of "Animal Parasites and their Effects," Dr. John Guit  ras of "Diseases of the Blood and Spleen, Tuberculosis and Scrofula," Dr. N. S. Davis of "Rheumatism and Gout," Dr. James Tyson of "Diabetes and Diseases of the Suprarenal Capsules," Dr. Francis Delafield of "Diseases of the Kidneys and Bladder," Dr. Tyson of "Urinalysis, Chyluria and H  moglobinuria," and Dr. E. C. Spitzka of "Psychological Diseases."

This volume, it is needless to say when we look at the names of the contributors, lacks nothing that could be desired.

Volume II of the series opens with a paper on "Surgery of the Brain and Nerves," by Dr. Senn. Dr. J. Ewing Mears contributes a paper on "Surgery of the Abdomen," and Dr. Charles B. Kelsey one on "Diseases of the Rectum and Anus." Dr. E. L. Keyes writes of the "Surgical Diseases of the Genito-Urinary Apparatus in the Male," Dr. John A. Packard on "Diseases and Injuries of Arteries and Veins," Dr. Lewis A. Stimson on "Fractures, Dislocations, and Sprains," Dr. P. S. Conner of "Amputations, Excisions and Plastic Surgery; Diseases of Bones and Joints," Dr. Hunter McGuire of "Gunshot and Punctured Wounds," Dr. John Guit  ras on "Surgical Tuberculosis, Abscess, Carbuncle, etc.," Dr. Arthur Van Harlingen on "Diseases of the Skin," the good colored plates of which have been rather awkwardly folded in. Dr. Morris Longstreth contributes an article on "Tumors," Drs. F. R. Sturgis and A. F. Buechler the paper on "Venereal Diseases," Dr. Christopher Johnston the one on "Surgical Diseases," Dr. Henry M. Lyman the one on "An  sthetics," and Dr. D. Hayes Agnew the one on "Surgical Diagnosis."

The paper on "Diseases of the Skin" shows the progress being made by dermatologists. The work in this field has been very great within the last two years, especially in the therapeutics of skin diseases.

A MANUAL OF MINOR GYNECOLOGICAL OPERATIONS. By J. HALLIDAY CROOM, M.D., F.R.C.P.E., F.R.C.S.E., etc. First American, from the second Edinburgh Edition. Revised and enlarged by LEWIS S. MCMURTRY, A.M., M.D., etc. With numerous illustrations. 8vo, pp. 228. Philadelphia: Records, McMullin & Co. 1888. Chicago: W. T. Keener.

Surgeons and gynecologists have been so much occupied of late years in writing of the larger gynecological operations that the stepping-stones to gynecology—the minor operations have had but little place in literature. This hiatus in gynecological literature has been filled by this book, from the pens of two men—one in Great Britain, the other in America—both admirably qualified

for the work. Dr. Croom is well-known on this side the Atlantic, both as a writer and an operator, and it does not detract from his reputation to say that the American editor of the work is equally well-known.

The chapters of Part I, Diagnostic, of the book are on: Vaginal examinations, the Rectum, the Bladder, the Speculum, the Sound, Volsella and Tenacula, Dilatation of the Cervix Uteri with Tents, the Aspirator. In Part II, Therapeutics, the chapters are on: the Vulva, Vagina, Urethra and Bladder, Cervical Applications, Intra-uterine Therapeutics. In addition to those Dr. McMurtry has added an Introduction and an excellent chapter on Laparotomy. The book is a safe and complete guide to the performance of minor gynecological operations.

MISCELLANEOUS.

BAD PRESCRIBING AND STILL WORSE DISPENSING.—The writer was recently summoned as a witness in a New York Court, and heard the following case:

A physician gave a patient for colic $\frac{1}{3}$ of a grain of sulphate of morphine by hypodermic solution in the walls of the abdomen, and gave him a prescription for "Mistura Squibb 52" to be taken as directed. The verbal directions given with this were that if, on reaching home, the man's pain was better, he should take none. If about the same, take a teaspoonful; if worse, take two teaspoonfuls. In a few minutes after the man left it, the pharmacist came to the physician's office to ask what "Mistura Squibb" was, or what was meant by it. The physician gave him the formula for the common compound tincture of opium or diarrhoea mixture. He knew what that was, and went off to dispense it. A short time after he came to the physician again, and said he had made a great mistake by having dispensed the compound solution of opium, a preparation six times stronger than that intended, and containing a proportion of opium equivalent to about $7\frac{1}{2}$ grains of sulphate of morphine to the fluid-ounce.

They at once sent for the patient to come to the pharmacist's store, when they found he had taken two teaspoonfuls of the compound solution of opium, about equivalent to 2 grains of sulphate of morphine, after having had $\frac{1}{3}$ of a grain by hypodermic injection. The gravity of the case was at once realized, and very vigorous, proper measures were adopted to counteract the opium; and after two physicians walking and dragging the patient through the streets all night with occasional bowls of strong coffee—keeping near to a large hospital where a battery was in readiness in case the respiration should entirely fail—signs of improvement began. Then in a few hours more the danger was past.

It seems altogether inexcusable for any physician to write such a line as that above quoted and issue it as a prescription, because it really indicates nothing, and means nothing that any pharmacist is bound to know, or can in any way be responsible for not knowing. If physicians, by thoughtless habits abbreviate and curtail their names so that they signify nothing with definiteness or safety—and will use names of persons instead of things, or proper names as indefinite adjectives—they not only discredit themselves, but also their profession, and when they get into the Courts they can expect no mercy.

The pharmacist in this case did exactly what was right, and took the only proper course open to him, when he went to the physician with his nondescript prescription,

for an explanation, and the physician then did the best he could do by giving him the formula for it. But, after this, the pharmacist went back and committed the almost criminal blunder of dispensing a solution instead of a tincture, the one six times stronger than the other—with the formula for the weaker one in his hand, and the label of the stronger one on his bottle, with a nearly fatal result.—*Squibb's Ephemeris*, June, 1888.

THE HYGIENIC PROTECTION OF RAILWAY PASSENGERS DURING THE COMING SUMMER.—Dr. Rauch, Secretary of the Illinois State Board of Health, addresses the following circular to the railway managers of Illinois:

The Board directs me to advise you that it is deemed desirable before the advent of warm weather to secure such care of railway stations and grounds, and of railway travel, as may tend to improve the sanitary condition and comfort of passengers generally, and specifically to limit the danger of any epidemic contagious disease.

Although there seems to be no immediate cause for alarm as to Asiatic cholera, the germs of that disease still exist in some parts of Europe whence large numbers of immigrants are constantly arriving in this country; and it now prevails as an epidemic in Chili, Brazil, and probably elsewhere in South America. Until it has died out in the countries with which the United States has direct commercial intercourse, it will not be prudent to relax vigilance, nor to omit proper precautions.

We had a narrow escape last fall from the introduction of this disease, and there is no telling what may happen during the summer.

The cleanly condition of water-closets on cars and at stations, also of privies, and the purity of drinking-water supplies for passengers and employés are matters of the first importance in this connection. At many of the small stations the conditions which obtain in these respects are far from satisfactory. When privies are used they should be kept clean by constant attention. Vaults should be emptied at proper intervals, the contents disposed of so as to prevent further nuisance, and efficient disinfectants should be freely and continually used. Explicit instructions on these points will be furnished by the Board whenever requested.

Interruption of railway travel and traffic may be prevented, and the comfort and welfare of the travelling public will be promoted by good sanitary conditions, and the Board will cheerfully coöperate with you to secure these ends.—*Sanitary News*.

HEALTH IN MICHIGAN IN MAY, 1888.—For the month of May, 1888, compared with the preceding month, the report indicates that consumption and measles increased, and that influenza and neuralgia decreased in prevalence.

Compared with the preceding month, the temperature in the month of May, 1888, was much higher, the absolute humidity much more, the relative humidity about the same, and the day and the night ozone slightly more.

Compared with the average for the month of May in the nine years 1879–1887, measles were more prevalent, and intermittent fever, remittent fever, diphtheria, consumption of lungs, and diarrhoea were less prevalent in May, 1888.

For the month of May, 1888, compared with the average of corresponding months in the nine years, 1879–1887, the temperature was lower, the absolute humidity was less, the relative humidity slightly more, the day and the night ozone were much less.

Including reports from regular observers and others, diphtheria was reported present in Michigan in the month of May, 1888, at twenty-three places, scarlet fever at fifty-four places, typhoid fever at fourteen places, and measles at twenty-four places, and small-pox at one place.

Reports from all sources show diphtheria reported at three places more, scarlet fever at eleven places more, typhoid fever at one place less, and measles at nineteen places more in the month of May, 1888, than in the preceding month.

PRIZE STUDIES OF TORNADOES.—The *American Meteorological Journal*, desiring to direct the attention of students to tornadoes, in hopes that valuable results may be obtained, offers the following prizes:

For the best original essay on tornadoes or description of a tornado, \$200 will be given.

For the second best \$50.

And among those worthy of special mention \$50 will be divided.

The essays must be sent to either of the editors, Professor Harrington, Astronomical Observatory, Ann Arbor, Michigan, or A. Lawrence Rotch, Blue Hill Meteorological Observatory, Readville, Mass., U. S. A., before the first day of July, 1889. They must be signed by a *nom de plume*, and be accompanied by a sealed envelope addressed with same *nom de plume*, and enclosing the real name and address of the author. Three independent and capable judges will be selected to award the prizes; and the papers receiving them will be the property of the journal offering the prizes. A circular giving fuller details can be obtained by application to Prof. Harrington.

ASPHALTE PAVEMENTS AND THE PUBLIC HEALTH.—The vapor of tar has been supposed to be beneficial in a number of disorders, but Dr. Edmund J. Mills, of the Glasgow Technical College, has written a short note on the injurious effects of tar vapors so copiously discharged on our streets while asphalt road-mending is going on. It is said that the injurious effects of these fumes is perfectly well known at tar works, where the pitch is always cooled down in a closed chamber prior to casting in blocks. Casual inquiries have convinced him that the operations of road repair in Glasgow have been, during the last three weeks, the cause of a great deal of totally unnecessary illness, the leading symptoms of which are nausea and giddiness. He himself has been three times prostrated in this way, and has been thereby debarred from pursuing his ordinary professional work until these repairs cease. In view of the serious inconvenience from which many more must have suffered, it is to be hoped that the use of pitch in the future may be dispensed with, as the operation of road-mending can, if desired, be conducted without any offence whatever to the public health.—*British Medical Journal*, May 12, 1888.

MEDICAL PRACTICE IN CANADA.—The *Toronto Mail*, of May 19, says:

The Ontario College of Physicians and Surgeons has built a high wall around and about the practice of medicine in this province. Now and then they add another tier, until the struggle to get over the wall is hardly worth the exertion it costs—at least, that is what is being said by many who are anxious to get inside. Occasionally a kicker appears on the scene, shines in full splendor for a brief day, and then is snuffed out in the most unceremonious manner. One of this class illuminated the Police Court yesterday. His name is J. H. Stewart, and he appeared to answer a charge of practicing as a medical man without the necessary sheep's skin. The case went against him, and he was fined \$100, with the option of thirty days in goal. His wife, who was also charged with a breach of the Medical Act, was discharged.

MEDICAL SOCIETY OF JAPAN.—In the report of the proceedings of a special meeting of the Sei I Kwai or Medical Society of Japan, held at Tokyo on November 30, 1887, the *Australasian Medical Gazette* says: The first business which occurred was the introduction by the President, Takaki-Kanehiro, F.R.C.S., Eng., of Miss Light, M.D., a recently-elected member of the Society practicing in Tokyo. This election shows a liberal and enlightened spirit we cannot too highly eulogise. Many of our readers may not be aware of the prominent position which is taken by modern European medicine in Japan, we therefore think it not out of place to say that the leading practitioners, who are really numerous, possess diplomas of the highest character, which they ob-

tained after study in Europe, and the papers read at and the reports of the meeting of this society show how highly cultivated these gentlemen are, and how enthusiastically and thoroughly, medicine, surgery, and sanitation are practiced in Japan, which but thirty years since was a sealed country against all European knowledge. The action of the State in these matters is far in advance of that of the Australian Governments, and the reports of the medical department of the Japanese Imperial Navy are almost a lesson to the world.

AN OLD IDEA PATENTED.—Dr. Joel W. Smith, Charles City, Iowa, writes: "The Fanny Suture," said to be patented July 13, 1886, in England, France, Austria, etc., consists in the application of adhesive plaster, upon each side of a wound, (wherever skin sutures or adhesive straps have usually been made use of to bring the divided or weakened parts in close apposition, and so as to favor the healing process) with eyelets at the end or side of each plaster nearest the wound, and thus permitting the lacing of the two plasters together.

The writer can testify that it is a valuable substitute in many cases for long plaster strips or skiin sutures, after having repeatedly made use of the same thing, and in the earlier years of professional life, beginning 1850. The patent, of course, could not be sustained, but it is well to have it widely advertised.

THE COLLEGE OF STATE MEDICINE was incorporated in London in 1887, and is presided over by Sir Joseph Fayrer. The course of lectures during the summer session will be given in rooms of the Chemical Society, Burlington House. Among the lecturers will be Professors Klein, Fleming, Fayrer, Brudenell Carter, Seely, and Sir Robert Rawlinson. The regular Professor of hygiene and public health is Dr. Wm. Robert Smith. The Public Health Laboratory connected with the College will be open throughout the session, which opened early in May.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from June 16, 1888, to June 22, 1888.

Col. T. A. McParlin, Surgeon U. S. Army, granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 52, Dept. of Platte, June 20, 1888.

Major J. M. Brown, Surgeon, will take charge of the office and duties of the Medical Director, Dept. of the Platte, during temporary absence of Col. McParlin. S. O. 52, Dept. Platte, June 20, 1888.

First Lieut. Chas. M. Gandy, Asst. Surgeon, granted leave of absence for three months, to take effect on or after July 5, 1888. S. O. 145, A. G. O., June 23, 1888.

Capt. Wm. O. Owen, Jr., Asst. Surgeon, ordered to Ft. Leavenworth, Kan., for duty. S. O. 148, A. G. O., June 27, 1888.

Major A. A. Woodhull, Surgeon, granted leave of absence for three months, to take effect about July 10, 1888. S. O. 148, A. G. O., June 27, 1888.

First Lieut. J. D. Poindexter, Asst. Surgeon, granted leave of absence for one month. S. O. 55, Dept. of Dak., June 18, 1888.

Capt. Marshall W. Wood, Asst. Surgeon, ordered to Ft. Randall, D. T., for duty. S. O. 147, A. G. O., June 26, 1888.

Capt. Wm. C. Shannon, Asst. Surgeon, ordered to Ft. Meade, D. T., for duty. S. O. 147, A. G. O., June 26, 1888.

Capt. Geo. McCreery, Asst. Surgeon, ordered to Ft. Warren, Mass., for duty. S. O. 147, A. G. O., June 26, 1888. So much of par. 3, S. O. 142, A. G. O., June 20, 1888, as relates to Capt. Geo. H. Torney and Geo. McCreery, Asst. Surgeons, is revoked. S. O. 147, A. G. O., June 26, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, JULY 14, 1888.

No. 2.

ADDRESSES.

ADDRESS ON DIETETICS.

Delivered at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY E. A. WOOD, M.D.,
OF PITTSBURGH, PA.

The growing importance of and interest in dietetics would seem to be a sufficient justification for the action of the American Medical Association in appointing a committee to report on that subject at this session.

Through lack of acquaintance it was impossible to name a committee that would comprise all, or even a large number of, persons especially fitted for the work. The embarrassment from that cause has been made less through correspondence with many physicians in different sections of the country, with the result of securing the services of several who are willing to act, not to formulate an exhaustive report at this time, but to give aid and encouragement to a more complete organization by which the subject may be more systematically presented in the future. But, even with this gratifying success, your committee feels that very many able men are, through no discourtesy, not on its roll of membership. On account of these hindrances organization was impracticable, and we come before you as a preliminary committee with a preliminary report.

We respectfully recommend that the Association take such action at this session as shall insure a continuance of the work thus begun, either by the organization of a large special committee, or by the establishment of a Section on Dietetics.

Food and drink have ever held the highest place in human affairs. As populations increase and communities advance in culture, alimentation becomes more diversified, while tastes, habits and customs evolve an almost endless variety of foods, drinks, cooking, eating and drinking. In savage and pioneer life the chief concern is how to get food; with highly civilized people, but especially with Americans, who revel in plenty, it is not so much a question of how to get food as how to cook, and how and what to eat and drink, as well as what to avoid. With the savage it is feast or famine, with starvation as the chief men-

ace to vigor and life; with the civilized it is generally plenty, but with loss of vigor, or disease, or premature death as the frequent penalty. The early loss of the teeth, contracted jaws, dyspepsias and diseases of nutrition constitute the constant menace to the luxuriously fed American man or woman. Thinking Americans are beginning to realize their peril, and to carefully consider the questions how to cook, and how and what to eat and drink that shall secure the greatest degree of comfort, the highest vigor and the longest life. Thus from forced observation and experience was dietetics born, and, based as it is on the law of self-preservation, it is destined to live and grow into an intensely practical branch of knowledge.

From this start in necessity, in which empirical generalities constituted the chief stock in trade, have been rapidly evolved the principles of dietetics, now shorn of much of its empirical crudities, and, although still incomplete, it stands to-day in the very front ranks of medical art for accuracy, efficiency and importance.

Dietetics has joined hands with organic chemistry to solve the problem, What is the pabulum of physiological life, and what are its relative and component elements? From that department of scientific research we now know accurately the kinds and amounts of the several food elements that will maintain human life in vigor from the cradle to old age, and under all vicissitudes and conditions.

Dietetics has joined hands with physiology to more clearly elucidate the occult functions—digestion, assimilation and nutrition, the waste and repair of vegetable and animal tissues. Where once it was believed that digestion was a simple and single process, it is now known to be highly complex in its processes, and consisting of at least three kinds, differing in the manner of doing and the kind of work done. By this accurate knowledge we are enabled to so arrange the work that the best results may be had. We know that inharmonious action of the three kinds of digestion not only provokes disease of the digestive organs, but also supplies the economy with impoverished pabulum, unfitted to maintain normal nutrition, or with a rabble of vicious products that poison the system with gout, rheumatism, neurotic and skin affections, and other maladies until lately

never suspected of being connected with disordered digestion.

Dietetics has joined hands with the cook, and raised her from the scullery to the position of the artist of the noblest of all arts. The cook is rapidly learning that cleanliness is next to godliness, and that tidiness is the religion of housekeeping. Wives and mothers are learning, what should have been learned long ago, that pleasing the palate is sweeter than pleasing the eye or ear, that properly cooked food is the best health preserver, the best health restorer, and a powerful social and moral agent.

Dietetics has recently taken another step. It has joined the kitchen with the public schools. The maidens who are soon to be the mothers of this nation are learning therein that their loved ones at home will look more proudly on the kitchen than on the drawing-room, and that the urn simmering for tea on the domestic hearth makes sweeter music than the pianoforte. Dietetics is teaching that tidiness in the dining-room—the snow-white cloth, the smoking viands prepared by the loving hands of a dimpled, white-aproned wife, will keep the husband from the grogshop, or reclaim him if he ever went there, with a thousand-fold more power than all the temperance sermons ever preached.

Dietetics has taken the American by the hand, and is showing him how he may escape from the thralldom and disgrace of our National curse, dyspepsia. It has long been charged that dyspepsia is a prevalent malady in America. This charge has never been denied, as it never has been proved. It is time we were finding out the exact truth of the charge. The charge is probably true, and we must begin to look the truth square in the face. If we are a nation of dyspeptics—and probably we are—then consequences the most dreadful—no less than the extinguishment of our race, threaten us. The medical profession of this land, if actuated by no other motive than patriotism, should begin investigating the evil, its cause, and the definite and effective plan for its arrest. The people's attention must not only be called to the consequences of dyspepsia to the individual, but they must be aroused to the awful fact that, by the laws of heredity, the dyspepsias of one generation will crop out in the degeneration of the offspring; that neurotic diseases, tuberculosis, drunkenness, and crime itself, may, and that some of them will, entail themselves on the child as the legacy of a dyspeptic father or mother. Americans must be taught that no nation of dyspeptics can long survive as against the aggressive competition of robust nations.

Dietetics is taking the physician in hand and leading him into fresh and richer fields. The route of his retreat from the moss-grown domains of custom and prejudice is littered with lancets, and blisters, and antimonials and mercurials. It

is found to be easier and more profitable to lead a patient back to health by the food instead of the drug route. Not that drugs or lancets should or will be dispensed with as remedial agents in many conditions of disease, but that their employment is much less demanded than was formerly thought possible. Enlightened and experienced physicians are coming more and more to depend on dietetics and sanitation, and on drugs and lancets less. Dietetics not only reveals the wonderful resources of alimentation in pathological conditions, but it also, while narrowing the sphere of drugs, more clearly defines their mode of action, makes plainer their indication, and makes them more efficient. It may be confidently claimed that he who relies least on drugs has the greatest confidence in them. This seeming paradox is explained away when we remember how often drugs fail when given exclusively or promiscuously, and how common their success when conjoined with suitable regimen. Again, the proper supply of nutrients is the all-important object in nearly all cases of disease; in many cases alimentation is all that is required, while drugs may perturb; in other cases wherein drugs are indicated they are of secondary importance, to correct some incidental symptom. In a very few cases, simple in form and of transient duration, drugs alone are required. In this *rationale* of modern physic, medicines have become not only subsidiary, but also come to possess a specific relation, not to the disease *per se*, but to the disease symptoms. Thus, a drug may reduce pyrexia, a *disease symptom*, and is therefore a specific for that special condition, but its use ends there, as should its employment, while alimentation is the beginning, the middle, and the end—the *vis preservatrix* in the treatment of all diseases.

Medicines used in this way rarely disappoint and, what is nearly as good, they rarely do harm. The practitioner who thus employs them will have the greatest confidence in their ability to do the work required. Many families in this land, and their number is yearly increasing, are content to allow their physicians to treat their maladies by rest and dieting, to the more or less exclusion of drugs, from having experienced the gratifying success of such a mode of treatment. As drugs drove the lancet from the field, so will rational dietetics restore bleeding to its legitimate place, and limit the usurpation of medicines, and both will be the servants, not the masters, of alimentation and nutrition.

Perhaps in no other class of maladies is the reliance on alimentation so apparently remedial as in the malnutrition and diseases of infancy and childhood. The mortality of children under 1 year of age is frightful and criminal; frightful from the large proportion of deaths, and criminal because nine-tenths are from preventable causes. It is believed that a large majority of the cases of

sickness among children, especially during the summer months in cities, are caused by overheating, bad ventilation, improper food and faulty feeding, and the prevalent opinion is probably correct. But in the multiplicity of causes precision is impossible. All these causes play parts in the terrible drama, but too little is known of the exact influence of each cause separately considered. Of them all it is almost certain that improper food and overfeeding, especially in cities during the hot weather, are the two which preponderate.

There are two classes of people that need looking after: the first is the vendor of unwholesome milk. This class must be taken in charge by the strong arm of the law. Milk kept in foul vessels, watered milk, adulterated milk, and milk from wretched cows chained up all their miserable lives in dark stables and fed on brewery slops, slay annually thousands and thousands of helpless babes in our cities. Such milk is unfit for any purpose, and it should be kept out of the market. Those who vend such milk are deliberate murderers, and they should meet with the punishment commensurate with their cowardly crime. The other class consists of the mothers and nurses, who will persist in overfeeding babes, dreading starvation, ignoring the fact that babes need water, not milk, when fretful and feverish from indigestion. The crime of this class is ignorance, and they must be educated out of their pernicious practice. Thousands of children may be saved by lessening the amount of food during the heated term.

The questions, What is the best substitute for human milk, and what is the best food for weakly and invalid children? although more frequently asked than formerly, still remain *sub judice*, or at least the solution of the questions is not generally accepted in practice. Accurate knowledge in regard to them must be given by some authoritative body.

Cow's milk, sometimes slightly modified, seems to be the most rational and favored as the substitute for the mother's milk. This generally accepted belief is based partly on experience, and partly on the physiological precept that there can be no digestion of starch foods prior to dentition. But experience and precept are sometimes both upset in cases of infants who do not digest milk but who do digest modified starch foods. In the absence of precise knowledge on the subject of infant foods and feeding, we go on treating infantile maladies with an empiricism redeemed only by the common sense and experience of the individual practitioner. The aggregated and formulated experience of the whole profession is wanting, while tradition, united with straggling experience, serves as a fickle indicator rather than a reliable guide in the dietetics of infancy and childhood.

Among the besetting evils of Americans are rush, overwork, great plenty and variety of food, great food waste, bad cooking and badly cooked

food, hurried eating, foul water supply to cities, and dram-drinking. Any one of these evils tends to the impairment of health, and all of them aggregated are sure to result in the deterioration of the race. The duties of the medical profession have so widened that it is become to a large extent the custodian of public health. The world cannot produce such a field of useful, necessary work as lies before the profession in America—the work of arresting the decay of the American race. Can this Association, whose grand function it is to crystallize medical thought and direct medical art in this country, longer refuse to lend its authority to warn our people of the danger ahead, and to direct its powerful organization against the evils which, if not arrested, will result in disaster to our people and our Nation?

When the first submarine cable was laid a scientist predicted that some deep sea animal would turn up to eat the covering of the cable. The prediction was verified. Dietetics already has its parasites. To hear these barnacles prate of foods, and peptones and artificial digestors, one is led to believe that dyspepsia will soon be numbered with the lost tribe. Their advertisements are to be found in many respectable journals. The wares they offer are generally a discredit to the few physicians who have, perhaps thoughtlessly, praised them, and the whole business—wares, journals, and praising doctors—brings discredit on dietetics. On this subject the American Medical Association must exercise its authority in the most positive manner. Not only is the public wronged by the avalanche of "food" products on the market, but the busy and honest practitioner, who has no time to investigate, nor has he authority on the subject, is at the mercy of these vendors of "physiological foods," "chemical foods," invalid foods," *ad nauseum*, that flood our drug-stores. What is wanted is thorough investigation of these often worthless compounds before a tribunal of competent men who can voice the truth with that authority which will command attention and confidence.

Is there danger of going to extremes in dietetics? Is it possible to attach too much importance to digestion and nutrition? Yes; a few people will ride nothing but a hobby-horse. But dietetics will not be carried to extremes; it will, however, have many radical disciples. From Hippocrates down there has been a constant conflict between ultraism and conservatism in medicine, and the strife will continue until medical science ceases to progress, and until the art is exact. If the conservatives have fought more stubbornly, the radicals have won more victories. The disciples of Jenner won a brilliant success over their jeering opponents; the ultra bacteriologists are likely to defeat the conservatives; Listerism is more reliable than former methods, and Lister is an extremist.

Dieticians will incline to ultraism, but the principles of dietetics cover too much ground to ever assume specialty, or build up an esoteric class of practitioners. Dietetics is too broad for the specialist. Ultraism is not always an evil nor its practice a sin. All great medical pioneers have been regarded as extremists in their day. The ultraism of a generation ago is the conservatism of to-day.

And what is the ultraism of dietetics? Briefly, that digestion and nutrition constitute the all in all of animal life; that many forms of disease, as gout, rhenmatism, Bright's disease, many neuroses, skin diseases, and other affections, are but manifestations of faulty digestion or malnutrition; that maladies belonging to the above class can only be successfully treated by judicious alimentation, while drugs hold a very subordinate place in their cure. This kind of ultraism will grow and deserves to grow. Many advanced thinkers believe that phthisis pulmonalis cannot exist without antecedent indigestion, followed by faulty nutrition; that the lung lesion often begins as dyspepsia, and that no case of consumption was ever cured except by restoring digestion and nutrition, and that the more complete their restoration the more thorough the cure of the lung disease. With all the investigations, lasting through centuries, seeking for a drug to cure consumption, and with all the various claims that have been made for medicines which held the boards for longer or shorter periods as specifics in consumption, not one of them remains to-day as a remedy for that affection, and, although ignorant faith may cling to some of the medical myths of the past, not an enlightened physician in this land but what selects his remedies more to restore digestion and nutrition than for any direct effect they may have on the disease of the lungs.

There is one abuse which has crept into modern practice under the seeming sanction of dietetics, and which calls for loud protest. Allusion is had to what may be termed *vicarious digestion*. This term applies to all methods by which the digestive organs are relieved of all or a part of their work, and includes the employment of all bland and easily digested foods, malted foods, predigested foods, and food per rectum. This practice, so efficient and necessary in acute stages of disease, and in all conditions where there is suspension of digestion, is pernicious when, as it often is, too long continued, or employed in cases where the digestive act is even moderately well performed. The pabulum supplied by vicarious digestion is not, it cannot be, endowed with that robust vitality belonging to the product of normal digestion, and hence can supply only a low grade of nutrition, sufficient it is true to bridge the system over a short interval of interrupted digestion, but lacking the vigor to sustain a strong and active state of health. Again, if vicarious digestion is too

long continued, or employed unnecessarily, paupers are made of the digestive organs. Our teeth are going because there is no longer need of that vigorous mastication peculiar to an age of crude cookery, and, if we persist in carrying vicarious digestion to the extent threatened, the stomach will lose its function and waste away toward the state of a rudimentary organ. The only way to keep the stomach strong is to force it to perform its legitimate work.

Vicarious digestion may become a habit if indulged in for too long a time; the papoid habit may become as enslaving and as destructive as the opium habit. The tissues will starve on cells that enter over the wall instead of by the appointed portals of vital action. Such nutrition does not stay, the puny cells have not received the stamp of genuineness and every emunctory is up in arms to turn the rascals out.

Food and drinks, feeding and drinking, would seem to exert a wonderful influence over the habits of thought, the customs and manners of races of men, and their diseases also. By searching we might find that the egotism, conservatism and tenaciousness of the Englishman are as much the results of his beef and ale as is his gout; that the sparkling *bonhomie* of the Frenchman comes from his dainty *cuisine* and bubbling champagne, as does also his mercurial disposition and his passionate life; that the macaroni and fortified wines bestow song and art on the Italian, as does beer and *sauer kraut* stamp solidity and patriotism on the German. America, ever able to give the world a lesson, contributes rush and dyspepsia as the product of hog and whisky.

CONSIDERATIONS ON THE ANATOMY, PHYSIOLOGY, AND PATHOLOGY OF THE CÆCUM AND APPENDIX.

*Read in the Section on Surgery, at the Thirty-ninth Annual Meeting
of the American Medical Association, May, 1888.*

BY JOSEPH RANSOHOFF, M.D., F.R.C.S.,
OF CINCINNATI.

Having been requested to present a paper on this very comprehensive subject, I believe to be best enabled to meet the requirements expected by considering the subject in its anatomical, physiological and pathological aspects, since here as elsewhere, a knowledge of the first of these is a pre-requisite to the understanding of vital processes, normal and abnormal. To enter into anatomical details requires no apology here, since this is the Section of Anatomy as well as that of Surgery.

Anatomy.—Strange as it may appear, the topography of the cæcum, the vermiform appendix, and the ileum is greatly misapprehended, not only by the profession as a body, but by most

anatomical writers. All agree that the cæcum, or caput coli, is a blind pouch about three inches in diameter, two and a half inches in length, and the widest part of the large intestine. In the relations of the cæcum to its serous coat, writers again agree with almost unanimity that "the cæcum is covered by peritoneum as a rule, in front and on the sides, and that the posterior surface is connected to the iliac fascia by loose connective tissue." Little as this description accords with the real it has become, as Mr. Treves has said, an "anatomical property," to be handed down from generation to generation, and to be utilized from time to time by writers on perityphlitis, though they be as observant as Oppolzer¹, Bartholow², Eichhorst³, or Pepper.⁴

In reality, the cæcum is with rare exceptions, completely surrounded by peritoneum from the ileo-cæcal valve to its apex. Bardeleben⁵ came to this conclusion as long ago as 1849, from the examination of 160 bodies. Twelve years later Luschka⁶ again insisted on the serous investment of the cæcum. Hyrtl⁷ followed in the same path, and in the examination of 100 bodies Treves⁸ never found the posterior surface of the cæcum uncovered by peritoneum or attached to the iliac fascia by areolar tissue. In two out of sixty-three bodies, both adults, which I examined in regard to this, I found the cæcum invested only in front and laterally. This peritoneal investiture applies not only to the cæcum, but often as well to the lower inch or two of the ascending colon. Special examination with reference to this point in hospital, mortuary and dissecting room has convinced me that the recto-cæcal inflammation or perityphlitis of Oppolzer, and the perforations of cæcum or appendix without involvement of the peritoneum are alike physical impossibilities in the vast majority of cases. What shall then be said of the suggestion and practice of Bugge⁹ to attack perityphlitic abscesses from the loin to avoid injuring the cæcum, or of the enthusiastic advocacy of Burchard¹⁰ of lumbar typhlotomy in acute perforating typhlitis.

From the posterior internal aspect of the cæcum, as a rule, from half an inch to an inch from its base, springs the appendix. This lateral position is altogether the result of unequal development; early in embryonic life the appendix and the cæcum form one continuous pouch. Towards the fifth or sixth week the cæcum appears at the side of the rudimentary intestinal loop, in the form of a short and broad dilatation. While it grows in length, its width does not continue uniform, it being widest at the base where it joins the colon and narrow below. The differentiation between the upper third and lower two thirds of the cæcum

does not commence till the tenth week, and as it progresses the former rapidly widens, while the latter does not greatly increase in calibre. The appearance is thereby presented of a long narrow tube hanging from and continuous with the apex of the projection from the intestinal loop; cæcum and appendix are thus formed.

They are continuous with each other in the axis of the former, and in the first-half of embryonic life are cylindrical like the small intestine. It is only in the sixth or seventh month that three ampullæ or sacculiform in the cæcum form the development of the longitudinal muscular fibres in bands or tæniæ. Three in number, they descend from the colon, and meet at the apex of the cæcum, that is at the root of the appendix; one lies on the side of the bowel into which the ileum enters, a second is placed on the posterior-external aspect of the colon and cæcum, whilst the third and most distinct runs along the anterior aspect of the gut. By the equidistant disposition of these bands in the foetal cæcum it is divided into three fairly equal parts. This foetal or conical type of cæcum may continue throughout life. Treves found it twice in 100 examinations. In a second type of cæcum the apex appears imbedded between two sacculæ, whereby the conical appearance is substituted by a more quadrilateral shape. This appearance Treves¹¹ found in only three subjects. "What usually occurs is that the part of the cæcum to the right of the anterior band grows quite out of proportion to that on the left. Moreover the anterior wall of the cæcum becomes more developed than the posterior. As a result the true apex of the cæcum is turned more and more to the left, until at last it is placed in close proximity to the ileo-cæcal junction, and can only be recognized by noting the point of origin of the appendix. The highly developed part to the right of the anterior band becomes so dependent and prominent that it forms a new or false apex to the cæcum, and it is to this projection that the anatomical term apex is usually applied."

The vermiform appendix is not so much a wanderer as is often represented; when examined it maintains pretty constant relation to the cæcum, the ileum and mesentery. In the majority of examinations made by me, the process was hidden from view behind the cæcum, and could be studied *in situ* only by drawing the cæcum aside. Resting for an inch or more of its course behind the latter it generally continues upwards behind the ileum and beneath the lower surface of the mesentery. In its upward course the appendix inclines to the left so that, as a rule, its tip points towards the spleen. In a much smaller proportion of cases the process lies perpendicu-

¹ Allgem. Wien. Ztg., 1858, xx and xxi.

² Americ. Journ. Med. Sc., viii, p. 354.

³ Real Encyclop. Art. Typhlitis.

⁴ Trans. Med. Soc. Penn., 1883, p. 227.

⁵ Virchow's Arch., Bd., ii, p. 584.

⁶ Virchow's Arch., Bd., xxi, p. 284.

⁷ Topog. Anat.

⁸ Intest. Canal in Man, Lond., 1885, p. 40.

⁹ Centralbl. f. Chir., 1881, p. 172.

¹⁰ New York Journal of Med., 1887.

¹¹ Treves, loc. cit., p. 35.

larly behind the cæcum, whereas it is exceedingly uncommon to find it dangling over the pelvic brim after the manner illustrated, even in our best standard anatomical works. In only seven of the examinations made by me did I find the appendix in part a pelvic organ.

The average length of the appendix is 4 inches, and its diameter is that of a goose-quill. Unless much below average length the appendix is never straight in its course. It always presents a spiral curve, the concavity of which looks to the right and upwards. In its width the appendix is subject to few variations except as a result of disease. Regarding its length the reverse obtains. In children it is relatively longer than in adults. Complete absence of the appendix was noted by Bartholin and Morgagni. Gerlach found it as large as a pea. On the other hand, Treves and Fitz found the appendix 6 inches long. In a specimen in my possession, that of a large adult, it is $7\frac{1}{2}$ inches long. In the museum of the Pennsylvania Hospital is an appendix 9 inches long. As described by Wistar,¹² it lay behind the colon and reached the under surface of the liver. Other peculiarities of the appendix in respect to position and mobility are often encountered; being for the most part the result of abnormal processes, they can more appropriately be considered under the pathology of this region.

When the normal appendix is drawn from its niche behind the cæcum and ileum, it will always be found completely surrounded by peritoneum and having a distinct mesentery by which it is attached to the under layer of the mesentery of the ileum. This appendicular mesentery or mesenteriolum, as it is technically called, springs at right angles from the lower surface of the mesentery, extends without to the ileo-cæcal junction, while within it forms a free and concave margin. In the fœtus it extends quite to the tip of the appendix, while in the adult the distal half-inch or more is free of mesenteric attachment and therefore movable. Haschke,¹³ Alby,¹⁴ Little¹⁵ and Treves¹⁶ refer to a second duplicature of peritoneum which is always demonstrable by traction on the appendix and is quite distinct from the mesenteriolum proper. It is smaller and anterior to the larger fold. It arises from the last inch or two of that border of the ileum which is most remote from the mesenteric attachment, passes over the inferior attachment of the ileo-cæcal junction, is attached to the cæcum and joins the mesenteriolum near the line of its insertion to the appendix. Like the mesenteriolum, this duplicature has a free and concave margin looking to the left. Between this fold and the mesentery of the appendix there exists the de-

pression, large enough to admit a finger, first accurately described and called by Luschka¹⁷ the ileo-cæcal fossa.

Complicated as the peritoneal investment of the appendix may appear, a knowledge thereof has a practical bearing. Since it is nowhere attached to the abdominal wall or to fasciæ covering the latter, and since, like the cæcum, it is everywhere covered by peritoneum, and since the serous walls bounding the ileo-cæcal fossa are in close relation with the appendix, the fatality of perforations of this part is greatly diminished by the natural tendency of inflamed serous surfaces to adhere and to limit an abscess which may develop. For the same anatomical reasons every perforation of the appendix must involve the peritoneum.

The usual seat of the cæcum and appendix is in the psoas muscle, the apex of the former pointing towards the inner half of Poupart's ligament. It is only in exceptional cases or where the cæcum is greatly distended that it extends outward and is in contact with the iliac muscle. Even in such an event a double serous layer intervenes between them. In almost all subjects the ileum extends over the inner border of the psoas, and its termination is loosely fixed to the pelvic brim by a double peritoneal fold. Great length of this and of the muscular wall will in certain cases permit cæcum and appendix a greater scope of movement than they generally possess. Under such conditions they may be found in the pelvis, even to the left of the median line. This anomalous position of the cæcum is of sufficiently frequent occurrence (18 times in 100) to account for its occasional appearance in inguinal and femoral herniæ and the opening of perityphlitic abscesses into rectum, vagina or bladder.

While, as already indicated, every extension of a cæcal or appendicular inflammatory process must involve the peritoneum, and if an abscess form this must be primarily intraperitoneal, the contiguity of the cæcum to the psoas and eventually to the iliac fascia, has an important bearing on the subsequent course of abscesses of this region. It will readily explain the peculiar decubitus of many cases of perityphlitis; the fixed position of the limb, the pains radiating towards the thigh and the genitalia, and the possibility, as Gibney¹⁸ has shown, of mistaking protracted cases for hip disease. In the cæcum and appendix radicles of the portal vein are found, accounting for the possibility of pyelo-phlebitis as a sequela of pericæcal inflammation. On the other hand, thrombosis of the iliac vein is of far less frequent occurrence than the anatomical relations of the cæcum would lead one to expect. Bamberger¹⁹ was the first to call attention to this compli-

¹² Quoted by Fitz, *Am. Jour. Med. Sci.*, vol. xcii, p. 32; and *JOUR. AM. MED. ASSOCIATION*, Jan. 21, 1888.

¹³ *Aubg. Splanchnologie*.

¹⁴ *Bau des Mensch. Körpers*.

¹⁵ *Dublin Quart. Jour.*, vol. lii, p. 193.

¹⁶ *Loc cit.*, p. 47.

¹⁷ *Virchow, Arch. f. Path. Anat.*, Bd. 21, p. 287.

¹⁸ *Am. Jour. Med. Sci.*, vol. lxxxi.

¹⁹ *Krankheiten des chylipoietisch. Systems*, p. 332.

cation, of which I. Wickham Legg²⁰ has quite recently reported a very interesting case that ended in recovery.

The anatomical relations of cæcum and appendix alone suffice to explain certain clinical differences between inflammatory conditions of the one or other part. The cæcum being comparatively superficial in position, its peritoneal coat continuous with that of the iliac fossa and anterior abdominal wall, an abscess about it would speedily manifest itself by the presence of a tumor. The appendix, on the other hand, being deeply seated behind the cæcum, and below the mesentery of the ileum, abscesses about it may continue for a considerable length of time without the appearance of a tumor in the right iliac fossa. The fixed position of the ileo-cæcal junction and the mesentery would often direct the progress of such an abscess towards the pelvis. Hence the great importance of rectal exploration in cases of suspected inflammation of the appendix, as a diagnostic measure; a factor to which Fenwick²¹ and Pepper²² have recently directed especial attention.

The position of the appendix may also account for another clinical feature of not a few cases of appendicitis, and that is the marked symptoms of intestinal obstruction. The thickened appendix, possibly embedded in an abscess, compresses the ileum from below and behind until obstruction in reality occurs. In 1876 Duplay²³ was enabled to collect twelve cases in which perforative appendicitis produced all the manifestations of internal strangulation.

Physiology.—If the cæcum and appendix have a function, it can only be inferred from comparative studies. It is well known that in the herbivora the cæcum plays the rôle of second stomach, forming, not an insignificant dilatation of the colon, but a vast reservoir communicating with the small and large intestines by narrow orifices. Its volume then occupies the larger part of the abdominal cavity, and its capacity may be twice as great as that of the stomach. Under such circumstances the cæcum approaches the small intestine very closely in structure. In the hare, for example, it possesses valvulæ conniventes, Peyerian patches, etc. A constricted terminal portion of the cæcum in this animal presents, in appearance at least, an analogue of the vermiform process as seen in man and the higher apes. In the carnivora, on the other hand, the cæcum is rudimentary. Whether well-developed or vestigiary, the cæcum undergoes modifications, both as to size and form, according to the kind of nutriment.

In man, the chief function of the cæcum is absorption, as evidenced by its wealth of solitary follicles and the presence of a group of five or six lymphatic glands which are always found in the

mesentery near the ileo-cæcal junction. By way of digression, it may be observed that secondary suppuration in these glands may occasionally explain the non-communication of perityphlitic abscess with the bowel. It is in the dependent pouch of the cæcum that gravity tends to retain the excrement for some length of time, until absorption changes its character from that found in the small intestine. It is in this most stagnant part of the alimentary canal, therefore, that faecal impaction or the lodgement of foreign bodies would most frequently take place. In the appendix, Lieberkühn's glands and solitary follicles exist in such profusion that facilities for absorption are even greater than in the cæcum. Hence the contents of the appendix are always of firmer consistence than those of the cæcum.

I have so often found the appendix occupied by a narrow column of rather firm matter, that I have been impressed with the idea that, in reëntering the cæcum, it may possibly act as a nucleus for the farther deposit of excrement, thus being the incentive to the moulding process which is perfected, of course, in the haustra of the colon.

In 1847 Gerlach²⁴ called attention to a valve at the orifice of the appendix which had already been described a hundred years before by Weitbrecht and Schrader.²⁵ It is best developed between the ages of 3 and 12, but even in adults is said never to be absent. In fresh specimens I could not demonstrate the valve, although its presence was inferred from the difficulty with which injections into the colon and cæcum would enter the appendix. More important to me than the valve appears the arrangement of the mucous membrane of the cæcum in pretty constant folds. Unless the parts are thickened by disease, the mucosa of the postero-internal part of the cæcum is arranged in rather low concentric folds around the orifice of the appendix. With distension of the cæcum they disappear. The appendicular orifice appears in the centre of these folds as in a vortex, towards which there would be a natural though sluggish current of whatever came in contact with the inner wall of the cæcum. It is only in this way that we can account for the presence in the appendix of elongated bodies like a pin, a bristle from a tooth-brush or a nail, when its orifice is hardly large enough to admit the pit of a cherry.

A probable function of the appendix is the secretion of mucus, of which a very considerable quantity is usually incorporated with the excrement. When the appendix of the rabbit is opened there exudes a thick gummy secretion differing entirely from that of the cæcum. When the appendix of man is patulous it contains also a thick glairy mucus, like that which can at all times

²⁰ St. Bartholomew's Hosp. Rep., vol. xvi, p. 259.

²¹ Brit. Med. Jour., 1884, vol. ii, p. 982 et seq.

²² Jour. Amer. Med. Association, January 21, 1888.

²³ Arch. gén. de Méd., 1876, vol. xxviii, p. 513.

²⁴ Zeitsch. f. Ration. Med., Bd. vi, p. 12.

²⁵ Hyrtl, loc. cit., i, p. 806.

be squeezed from the crypts of the tonsils. Like the tonsil, the appendix is a lubricator. Its function is not of a high order, as is evidenced by the fact that its absence or conversion into a fibrous cord can never be recognized *intra vitam*. It may therefore be concluded that, when well developed, the appendix has a function subordinate to that of the cæcum. The history of its development and its occasional absence stamp it, however, as a vestigiary part of the alimentary canal.

Pathology.—When Dupuytren,²⁶ in 1826, had first called attention to the relation of pericæcal abscesses to those of the right iliac fossa, observations in this field were rapidly instituted by continental writers. In 1830 Goldbeck²⁷, of Heidelberg, first suggested the term perityphlitis for all the inflammatory conditions of this region. In 1834 a step was taken in the right direction when Copeland²⁸ first differentiated lesions of the cæcum from those of the appendix, and another by Albers,²⁹ who first described that special form since known as "typhlitis stercoralis." In 1836 and 1838 John Burne³⁰ contributed, in two excellent articles, further knowledge concerning lesions of the cæcum and appendix. Within recent years, particularly, numerous articles on the diseases of this region have appeared and as a result their proper nomenclature is being gradually determined.

There are most excellent reasons, anatomical and clinical, for separating inflammations here present into those of the cæcum and those of the appendix; each to be subdivided into those of the part itself and those of the peritoneal investment. There is, it appears, a rational basis for the use of the terms, typhlitis to indicate inflammation of the cæcum, perityphlitis to indicate a like condition of its serous coat. Appendicitis, following in the path of With³¹ and Fitz³² should be reserved for inflammation of the appendix, and peri-appendicitis, or appendicular peritonitis for that of its peritoneum.

Of the varieties of cæcal and appendicular inflammation, those of the appendix are of far more frequent occurrence in grave cases than those of the cæcum proper. Yet it is equally certain that typhlitis is far from uncommon, although mortuary records would fail to show it. In the investigations of the anatomy of this part I was struck by the frequency with which evidences of chronic catarrh, in the form of patches of indolent venous congestion, pigment spots and superficial abrasions were encountered in the cæcum. In all such instances the scybalous contents were covered with a layer of opaque mucus. This catarrhal condition is by no means confined to those who are habitually constipated, but is often encountered

in the young, in whom the dependent position of the cæcum makes it a favorite seat for the retention of indigestible food. From this condition there is only a step, though a long one, to the typhlitis stercoralis of German writers, which, though doubtless of frequent occurrence generally ends in recovery and is therefore not often anatomically demonstrable.

Given, however, a continuance of the cause, which, in contradistinction to that of peri-appendicitis, is rarely a foreign body and the erosion becomes an ulcer. If the pressure effect of a hard, fecal mass be the cause, the ulcer would probably be seated in the posterior wall of the cæcum, where, therefore, the localized peritonitis or intraperitoneal abscess would be most likely to result. That such peritonitis may develop in any portion of the cæcal superficies is shown by the multiplicity of directions taken by perityphlitic abscesses in different cases. Whether the abscess presents itself above or below Poupart's ligament the superficial position of the cæcum generally causes it to appear early. The only exception hereto is that in which the pus travels towards the loins, under which circumstances the pericæcal trouble is probably secondary to a perirenal, spinal or iliac abscess.

The perforations which occur in the cæcum are not often produced by foreign bodies although a number of such cases have been recorded. They are not infrequently produced by tuberculosis, although here, as in the case of foreign bodies, the appendix is preferably the part affected. The ulceration may however exist in the cæcum alone, the appendix remaining unaffected. I beg to present a specimen of this kind.

It is evident that the views entertained from time to time concerning the relative importance, pathologically, of the cæcum and the appendix have vibrated like a pendulum. Dupuytren and his followers looked on the cæcum as the part primarily at fault. Burne located in the same part, and Habershon³³ followed in the same direction. In the more recent contributions of Kraussold³⁴ and Biermer the appendix has been given greater prominence than ever before. Whereas, formerly, as Kraussold puts it, the appendix was treated in a stepmotherly way, there is danger now that the cæcum will share this fate. While in the acuter and more fatal forms of perforative inflammation of this region the appendix doubtless plays the more important rôle, of 25 cases recently collected by me only one³⁵ being of the cæcum, it is unreasonable to ascribe every perforation to it from clinical evidence alone. Thus so admirable an observer as Fenwick³⁶ mentions a case in which an abscess of the thigh was opened and discharged

²⁶ *Tumeurs Orales*, v. iii, p. 12.

²⁷ *Ueber eigenthümliche Ent-Geschwülste d. recht. Hüftgegend*, 1830.

²⁸ *Dictionary*, vol. i, p. 277, quoted by Fitz.

²⁹ *Beobacht. im Gebiete d. Pathologie*.

³⁰ *Medico-Chirurg. Trans.*, vol. xx, p. 201 and vol. xxii, p. 33.

³¹ *London Med. Rec.*, 1880, i, p. 213, quoted.

³² *Amer. Jour. Med. Sc.*, vol. 92, p. 321.

³³ *Guy's Hospital Reports*, vol. xi.

³⁴ *Volkmann's Samml. Klin. Vorträge*, 191.

³⁵ *Case of J. J. Reed, Med. Record*, 1886, i, p. 401.

³⁶ *Loc. cit.*

faeces. In another instance an abscess terminated in a chronic vaginal fistula. Since both cases recovered what evidence is there that in either the appendix was primarily at fault. Fenwick, with others, rightly claims that the occlusion of the orifice of the appendix is a common cause of perforation. How can we logically, in such a case, account for the continuance of a copiously discharging faecal fistula. It appears to me much more probable that cases of this nature are primarily of caecal origin.

On the other hand the position of the appendix, the narrowness and tortuousness of its canal, the presence of a valve, the tendency of faecal or foreign matter to be retained in it and the readiness with which it is displaced, all serve to make the appendix the principal seat of grave pericaecal inflammation. It is not remarkable therefore that autopsies will often reveal pathological conditions of the appendix where death has resulted from other causes. Züngel, Toft and Kraussold have called particular attention to this fact. The latter writer even claims that between the age of 20 and 70 every third body will show traces of disease of the appendix, and that particularly in tubercular subjects it is often converted into a tubercular ulcer. In over sixty examinations recently made I found reasons for believing that in this section of the country, at least, the proportions quoted are entirely too large. In only eight were there either abnormal adhesions, unusually hard faecal masses, fibrous occlusion, or cicatrices on the surface. In only one instance was a foreign body (the stem of a raisin) encountered. The discrepancy between these observations and those of the authors alluded to may be accounted for by the greater indulgence in animal diet by our people. Speck⁸⁷ calls attention to the greater frequency of the diseases of this region, in Siberia, where the food, which is mostly vegetable, contains a large amount of indigestible residue.

The history of appendicitis is for the most part like that of inflammations in other narrow mucous canals with their catarrhal, ulcerative and cicatricial phases. Recurring like typhilitis and usually occurring like it about the period of adolescence, appendicitis is doubtless in many cases but the extension of disease from the caecum. The catarrhal thickening of Gerlach's⁸⁸ valve or permanent stenosis of the appendicular orifice may cause the retention of excrement or mucus, either of which may form the nucleus of a concrement. This or a foreign body has been shown by Matterstock⁸⁹, Fenwick and Fitz to be the cause of perforation in three-fifths of all cases. In other instances the appendix degenerates into a retention-cyst. Whatever the condition of the appendix if at all grave, the peritoneum is sooner or

later implicated. The favorable position of the appendix for forming adhesions and localizing abscesses without doubt often prevents a general peritonitis. On the other hand the rupture of such adhesions or residuary abscesses may fatally infect the general peritoneum. Not infrequently, where there is no foreign body, the appendix degenerates into a firm fibrous cord, buried in adhesions and often difficult to find. These are the cases in which the progress of the appendicitis is made manifest from time to time by clinical phenomena, and in which the appendix, as the seat of recurring disease and a constant threat to the individual, may, as was recently done, be justifiably excised.

In a very fair proportion of cases (seven out of twenty-five), no foreign body or fecal mass is found, nor can the rupture of a cyst or tubercular ulceration account for the perforation peritonitis. In such instances the distal inch or two of the appendix is often found gangrenous, either adherent to the appendicular base or as a slough-free in a pelvic abscess. This condition, it appears to me, is brought about by the displacement of the appendix and consequent torsion of its vessels. Since the distal half inch or inch has no blood supply independent of the base, torsion of the latter would primarily involve the tip. A number of facts support this view. In the first instance, the appendix is not a pelvic organ under ordinary conditions. In perforative appendicitis of rapid development the abscess is at least often intrapelvic. In the second place the exciting cause of perforating appendicitis is in one-fifth of the cases a violence, such as might result from blows on the abdomen, excessive exercise, lifting or vomiting. In the third place the gangrene is usually developed beyond the point of perforation. The latter is usually within one or two inches of the caecal end, the gangrene, however, involves the tip.

The subsequent pathological history of perforative appendicitis is outlined by the rapidity of the effusion and the facility or want of facility with which adhesions are formed. In many instances the contents of the appendix are thrown into the general peritoneal cavity, and death ensues with the rapidity and certainty pertaining to intestinal ruptures from other causes, and before adhesions form. In many cases, however, gradual drainage prepares the way for a limitation of the resulting abscess between mesentery and mesentericolum, small intestine within and caecum without, omentum in front and behind all, the reflections of the peritoneum over the psoas and eventually over the iliac fascia. Is it not possible, therefore, that except in foudroyante cases, the danger of general peritonitis is somewhat over-estimated?

When an abscess forms, what more probable than its more or less rapid course towards the surface, above or below Poupart's ligament, towards

⁸⁷ Quoted by Whittaker. *Pepper's Syst. of Med.*, vol. ii, p. 816.

⁸⁸ *Gerh. Handb. der Kinderkr.*

⁸⁹ *Treves, Brit. Med. J.*

the hypogastrium? Or that in other instances burrowing through the iliac fascia it should tend towards the loin; or opening into some hollow viscus like the cæcum, rectum or vagina eventually be recovered from?

It is beyond the scope of the task assigned me to dwell on the diagnosis and treatment of the conditions considered. When and how to deal with them will be discussed by those of my colleagues more competent and experienced. Were I, in conclusion, permitted a few aphorisms they would be: "Place not your faith in exploratory punctures; operate early and by lateral laparotomy when the symptoms are of the gravest and a tumor is not forthcoming; reserving the incision parallel to Poupart's ligament for abscesses that are palpable."

INTESTINAL OBSTRUCTION IN ITS SURGICAL ASPECTS.

Read in the Section on Anatomy and Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May, 1888.

BY CHARLES BINGHAM PENROSE, M.D.,
OF PHILADELPHIA.

Surgical operations are necessary in intestinal obstruction for two purposes—for diagnosis and for treatment. The great mortality of intestinal obstruction shows the inefficiency of the methods of treatment now generally used. For intestinal obstruction is not a disease which is necessarily fatal. It is a mere occlusion of the alimentary tract which, theoretically at least, is always capable of some form of relief. A person may occasionally die of the disease that produces the obstruction, but the obstruction itself is always amenable to treatment.

The mortality of all kinds of acute obstruction is nearly 100 per cent. when treated by medicinal means alone. And according to Peckwell's table, published in the *Annals of Surgery*, for February, 1888, the mortality in all cases of intestinal obstruction which were submitted to operation between the years 1877 and 1887 was 46 per cent. This almost certainty of death when medicinal treatment alone is used is due to the fact that attempts are made to overcome by drugs a mechanical difficulty of such a nature that it can only be overcome by mechanical means. And the great mortality after surgical treatment is due to the fact that operation is deferred too long; delay in operating being caused, in many cases, by an uncertainty of diagnosis; in others, because the symptoms have been masked by opium, in others on account of a misplaced confidence in the value of a preliminary treatment by drugs, and the "trust to luck" procedures like massage, rectal injections, puncture by a trocar, etc. This delay, this preparatory treatment of the patient, is the reason that laparotomy for intestinal obstruction

is so very much more fatal than laparotomy for any other cause. The average length of life in cases of acute obstruction is five or six days, and during this time the diagnosis must be made and a definite plan of treatment instituted. As, therefore, an early diagnosis is of such great importance, I would urge the free use of an exploratory laparotomy as a means of diagnosis in all doubtful cases; and in those most delusive cases of chronic intestinal obstruction with a past history of acute attacks. For it is in such cases that there is the greatest tendency to pursue the same expectant plan of treatment which may previously have been successful. An exploratory laparotomy performed in such cases at the very beginning of an acute attack is accompanied by but little danger and, by revealing the exact nature of the disease, it gives warning of how long it will be safe to allow the case to run on without operative relief.

In the *Lancet* for October 29, 1887, Mr. Treves reports two successful cases where exploratory laparotomy was performed for chronic obstruction. In one case an artificial anus was immediately made from the cæcum, and in the other the abdominal wound was closed and eight days later a lumbar colotomy was performed.

In discussing the surgical treatment of intestinal obstruction, I shall consider the general procedures which may be necessary for relief and treatment, without considering separately the individual forms of the disease or the details of the special surgical operations.

When laparotomy is performed for acute obstruction there is no time for much preliminary preparation of the patient. It may be necessary as a preparatory step to relieve abdominal distension; for great distension has caused sudden death by pressure upon the diaphragm and interference with the action of the thoracic organs; and the patient has, in several instances, died while anesthetized from suffocation by vomited matter entering the trachea (*Med. Record*, February 11, 1888).

These dangers may, to a great extent, be avoided by preliminary free washing out of the stomach with large quantities of hot water, either by making the patient drink the water, or by using the stomach pump. Puncturing the intestines with a trocar through the abdominal walls, as a preparatory procedure before the operation, must be but rarely necessary, and is not entirely free from danger.

Enterotomy and Colotomy.—The operations of enterotomy and colotomy were at one time very frequently employed for the relief of intestinal obstruction. They are, however, at the present day, rarely justifiable as primary operations, unless the exact nature of the obstruction and the impossibility of removing it have been ascertained beforehand, or unless the condition of the patient is such that even an exploratory laparotomy would

be fatal. Enterotomy and colotomy are safe operations; they are very easily executed, and they generally empty the intestines. They, however, do not cure the obstruction. Moreover, the operation is performed in the dark; the opening may be made below the obstruction; the jejunum and not the ileum may be caught, and the patient die of consequent inanition; a gangrenous loop of intestine may remain in the abdomen, or a cancerous mass which might have been removed may subsequently cause death. It may be found necessary, after laparotomy, to perform enterotomy or colotomy as secondary operations, but as primary operations they are rarely warranted.

Incision in Laparotomy.—In performing laparotomy for intestinal obstruction a median abdominal incision is the best. Laparotomy for obstruction is always more or less of an exploratory operation. The frequent anomalous anatomical arrangement of the intestines, the difficulty of diagnosing the position and nature of the obstruction, and the fact that more than one obstruction may exist, all render it most desirable that the primary incision should be the one which is best adapted for a general exploration of the whole abdominal cavity. Moreover, with very few exceptions, all the procedures necessary for the relief of the various kinds of obstruction are most easily performed through the median incision. Even in case a tumor is felt in the abdomen I think that a median incision is better than an incision immediately over the mass which is supposed to represent the obstruction. For there have been cases reported in which the tumor did not represent the site of the obstruction; and others in which it was found necessary to execute more extensive intra-abdominal manipulations than could be performed through the incision over the tumor. In a case of acute obstruction from peritoneal adhesions and subsequent kinking of the bowel upon which I operated several months ago, there was a decided swelling in the right iliac region, and this swelling represented the obstructed loop of intestine; there was, however, at the same time, a diseased condition of the sigmoid which would not have been discovered, and could not have been treated, through any but a median incision.

Length of the Incision.—The length of the incision depends upon the condition of the abdomen as regards distension and upon the position of the obstruction. In all cases it is best, in this as in other abdominal operations, to begin with a small incision and to enlarge it if necessary. A 3-inch incision immediately below the umbilicus is the most convenient. In any case a heroic incision from ensiform to pubis will enable the surgeon to find the obstruction very quickly, but it is also very liable to kill the patient. I think, however, that in some cases there is less damage done by a large incision than by the effort to work with the hand or fingers crowded through too small an opening.

Relief of Distension.—If the distended intestines interfere with the search for the obstruction their contents should be immediately evacuated by a transverse incision on the convex surface of the bowel, from $\frac{1}{3}$ - to $\frac{1}{2}$ -inch in length. The gut should be held over a basin and the abdominal walls compressed. I think that incising the intestine is better than puncturing it by a trocar; for a trocar of sufficient size makes a rude opening which is as difficult to close as an incision and does more injury to the wall of the gut; and fine punctures with needles allow only the escape of gas and frequently leak. After the distension has been relieved by incision, the opening should be closed by silk or catgut sutures. This method of emptying the intestines is opposed by some surgeons; I have, however, relieved abdominal distension in this way and have frequently seen it done by others, and never with any bad results.

The distension may also be relieved by a method of Rehn, of Frankfort (*Centralbl. f. Chirurg.*, No. 30, 1887), which consists in washing out the stomach with large quantities of hot water during the operation, in the same way that I have already mentioned as a preliminary proceeding.

Position of the Obstruction.—If the position of the obstruction is represented by a tumor or if it has been diagnosed in any other way, the operator has a guide with which to begin his search after opening the abdomen. This guide, however, is often uncertain; in many cases the tumor has been found not to represent the obstruction, and in other cases the position of the obstruction, though accurately diagnosed before operation, has been changed on account of the intestinal distension. In one case of intestinal obstruction upon which I operated the obstruction was caused by cancer of an enlarged sigmoid. The position of the obstruction had been accurately diagnosed two weeks before operation by the presence of a mass felt in the left iliac region, and through the rectum, and yet this mass was found, at the operation, after some difficulty, deep in the abdomen, on a level with and to the right of the umbilicus.

If, when the abdomen has been opened, a loop of intestine is found decidedly distended beyond its neighbors, and more congested and of a darker color, it will generally lead directly to the obstruction. This is one of the most useful guides to the operator. It has indicated the position of the obstruction in the three cases to which my experience is limited, and has served the same purpose in the great majority of reported cases which I have read. Grieg Smith says that this guide has failed to indicate the position of the obstruction only once in the eight cases upon which he has operated. The distended loop should be followed from the stomach toward the rectum, a procedure which is easy in the large intestine, but in the small intestine, as the anatomical guides indicating the direction of the gut are of no practical

service, it is best to begin by following the loop toward the pelvis; or, if there is much congestion, the gut should be followed in a direction from the less to the more congested portion. On the other hand, if collapsed bunches of intestine are found, they will also lead to the obstruction if followed in an upward direction; that is, from the rectum toward the stomach. Collapsed portions of the intestine, however, are not easily discovered. They do not present at the abdominal incision like the distended loops, but they lie deep in the abdomen or pelvis.

If these guides fail to reveal the position of the obstruction, a systematic search should be begun. The usual hernial orifices should first be examined with the finger, and the operator should then examine the region of the cæcum. Most acute obstructions of the small intestine, whether due to false ligaments or to diverticula or to intussusception occur in the lower part of the ileum. The right iliac fossa is the commonest position of localized peritonitis in men, and Mickel's diverticulum is generally found about two feet above the ileo-cæcal valve. For these various reasons the right iliac region is the best place at which to begin the search for the obstruction. If the cæcum is much distended it is probable that the obstruction is in the large intestine; if the cæcum is not distended the obstruction should be sought along the small intestine.

In examining the small intestine it is best to go over the bowel continuously, loop after loop. Unless there is very much distension, which can not be relieved, it is not necessary to draw the intestine through the abdominal incision. If the sides of the wound are retracted the manipulation can be carried out altogether within the abdomen, for it is not essential to make a close scrutiny of the gut as when hunting for gunshot or stab-wounds. It is very rarely necessary to roll out all the small intestines upon the abdominal walls, or to practice eventration, which is always a dangerous proceeding. In all cases in which the eventration was employed in Senn's experiments upon dogs, a considerable degree of shock was observed and a number of the animals died within a few hours after operation (*Annals of Surgery*, January, 1888). When the intestines are removed from the abdominal cavity it is always difficult to keep them from becoming chilled, and there is great danger of putting too much drag upon the mesentery. I have seen eventration practiced upon one occasion and it is advocated by several surgeons. It is certainly a proper procedure if the obstruction can be found in no other way, but it is safest to try gentler methods in the beginning.

When the obstruction has been found it may be necessary only to relieve the strangulation and to close the abdomen. Or the nature of the obstruction may be such that an artificial anus is re-

quired; or again the condition of the gut and the character of the obstruction may necessitate resection. Heroic operations, like resection of the intestine—which are now so often essential for the relief of obstruction, would be less frequent if surgical treatment was instituted earlier. Resection in certain kinds of cases will always be required, but resection for gangrene alone will be required less frequently when the proper treatment of obstruction becomes more generally recognized.

After freeing an intestine obstructed by a band or a diverticulum, or through an aperture, the band or diverticulum should be removed as thoroughly as possible and the aperture closed in order to avoid future danger. Foreign bodies or intra-intestinal tumors may have to be removed by incision of the bowel. Gall-stones and intestinal concretions may be crushed by padded forceps or broken by a needle inserted through the wall of the gut, or, if in the small intestine, they may be pushed onward into the colon.

The formation of an intestinal anastomosis for the relief of obstruction is a rather old surgical proceeding which has recently been brought to notice by Professor Senn. It consists in shunting off—to use an electrical expression—the obstructed portion of the intestine by joining, by lateral approximation, a portion of the bowel above the obstruction to a portion below the obstruction. I believe that this operation has been performed but twice upon man and with unsuccessful results. It promises, however, with the improved technique introduced by Senn to be a most valuable addition to intestinal surgery, and in many cases will avoid the necessity of an artificial anus.

If an obstruction can not be relieved, and can not be removed by resection, we are obliged to make an artificial anus or an intestinal anastomosis, as the only means of saving the patient's life. The artificial anus can either be made immediately at the abdominal opening; or if the condition of the gut and the strength of the patient will admit of delay the abdominal incision can be closed and a subsequent colotomy can be performed. In case there is gangrene of the intestine, the gangrenous portion should be removed, whether or not the divided ends can be brought together. The lower end can be closed and an artificial anus can be made from the upper end. Or if the obstruction is so high up in the intestine that obliteration of the lower portion may cause inanition from deficient digestion, both ends should be brought to the abdominal incision; the upper end for an anus, the lower end to receive prepared food for further intestinal digestion.

Resection of the Intestine.—Resection of the intestine is necessary in case the obstructed bowel has become gangrenous; in cases where the obstruction involves the intestinal walls as in carcinoma; or in cases of volvulus or of intussusception

which cannot be reduced. It is strongly advised by some surgeons (W. T. Bull, *Medical Record*, Feb. 25, 1888) in case of obstruction from malignant disease to relieve the obstruction by the formation of an artificial anus and to remove the malignant mass by a subsequent operation. I think the propriety of this advice depends altogether upon the condition of the patient at the time of the operation. It is certainly desirable to remove malignant disease as soon as possible and to devote the subsequent operation only to closing the artificial anus. In the only case of obstruction from carcinoma upon which I have operated, I removed twelve inches of the large intestine at the first operation with a successful result.

If none of the various resection clamps are at hand the gut may be very conveniently closed, above and below the portion to be resected, by slightly slitting the mesentery perpendicular to the edge of the bowel, in a position where no vessels are seen; passing then a piece of rubber drainage tube or rubber band around the gut and clamping the ends of the rubber with forceps.

Treves strongly advises the removal of a triangular piece of mesentery along with the resected gut. This practice, however, is not essential to success, as cases have been reported where successful resections have been performed without the removal of a portion of mesentery (Sewart, *Am. Jour. Med. Sciences*, Jan., 1886.)

In case, however, the two ends of the divided gut are immediately united the triangular piece of mesentery furnishes a useful peritoneal graft to place around the line of sutures, as an additional protection against leakage of the intestinal contents (Senn, loc. cit.). If a portion of mesentery is removed the cut edges should be united, whether or not the operator intends to make an artificial anus. For this closes a dangerous aperture, which might, if unclosed, be the cause of subsequent obstruction. And in case the ends of the bowel are immediately united, it tends to prevent kinking at the suture line.

The profuse bleeding which often takes place during resection from the intestinal and mesenteric vessels may be avoided by clamping or ligating the mesentery in portions before the bowel is removed. And if it is desirable to remove a portion of mesentery the triangular piece can be folded upon itself and the continued suture to close the gap can be introduced before the mesentery is cut.

Artificial Anus after Resection.—When the intestine has been resected the question presents itself whether the cut ends should be immediately united and the continuity of the intestinal tract restored or whether a temporary artificial anus should be made and the gut reunited by a subsequent operation.

This is one of the most important points in the surgery of intestinal obstruction.

The latter procedure—the formation of a temporary artificial anus—is undoubtedly much the safer method in all cases of acute obstruction and in acute attacks in chronic cases. In acute obstruction the fact that resection is necessary implies that the case has been one of some duration. The patient is in a dying condition, and relief to be of any use must be immediate. Suturing the divided ends of the gut prolongs the operation; a difficult operation is performed under circumstances most disadvantageous for its success, not only because it is much more difficult properly to introduce the peritoneal sutures on account of the attenuated condition of the intestinal walls, but also, because the line of union is from the beginning exposed to the great tension and pressure exerted by the intestinal contents. Moreover in these cases the whole absorbing portion of the intestinal tract is often full of feces, and the patient is suffering from toxæmia from absorption of excrementitious products, and it is therefore desirable that these products should be eliminated as quickly as possible. If the gut is united after resection the feces before escaping must travel a longer road; and must overcome the partial obstruction which always exists at the line of suture from the inversion of the edges, and the greater or less interference with proper peristaltic motion. And finally if we refer to statistics we find by the statistics of Reichel that there is a very much greater mortality when the gut is immediately united, than when a temporary artificial anus is made.

For these reasons the temporary formation of an artificial anus is the safer procedure.¹ A case to which I have already referred was a beautiful illustration of the instantaneous relief afforded by an artificial anus. The patient, a woman 53 years of age, had suffered with complete obstruction for twenty-eight days. Feculent vomiting had existed for two days before operation. She had not closed her eyes in sleep for a week before operation. The abdomen was tremendously distended. After resecting the obstructed portion of intestine, which proved to be an enlarged carcinomatous sigmoid, I made an artificial anus. Large quantities of feces and gas gushed continually from this opening. A few hours after operation the abdominal walls had become relaxed, flabby, and depressed below the costal margins. And the patient slept almost continually for the first thirty-six hours after the operation.

I admit that an artificial anus is a misfortune to be avoided if possible, and the ideal method, in cases of obstruction where resection is neces-

¹And this rule is good, I think, even when the obstruction is high up in the jejunum. It is often stated that, in such cases, the divided gut should always be immediately reunited, to avoid the danger of inanition from deficient digestion. But if both ends of the bowel are brought to the abdominal opening the patient can be fed not only by the mouth, but also by specially prepared food introduced into the lower intestinal opening. A person has been nourished for a considerable length of time in this way through the intestinal opening existed in the duodenum.—(*Lancet*, 1888.)

sary, is immediately to restore the continuity of the intestinal tract. This, however, can only be done with safety in those cases which are operated upon in the very beginning of the disease, where there is no tympany, no fecal accumulation and no exhaustion. But it is in just such cases that resection is very rarely necessary.

I do not think that improved technique in the methods of resection will enable us to do away with an artificial anus, so much as improvement in diagnosis, and a more general recognition of the value of early operation. When a temporary artificial anus is made after resection, it is a useful procedure to join the divided ends of intestine for at least one-half their circumference before uniting them to the abdominal incision. And when the ends of gut are fastened to the wound the mesenteric attachment should be placed in the lower angle of the wound, so that the lateral surfaces of the bowel fall in contact, and the subsequent closure of the anus by an enterotome will be simplified. In order to facilitate the closure of the artificial anus, I think that two perforated discs of metal might be introduced—one into each piece of bowel, from one to two inches from the free ends, and united to each other by sutures on the peritoneal aspect; in a way exactly similar to that employed by Senn for producing lateral approximation in making an intestinal anastomosis. When proper, the gut could be incised through the perforations of the discs, and the fecal discharge diverted through this channel.

Before attaching the bowel, the abdominal incision may be prepared by drawing out the parietal peritoneum and suturing it to the skin margin or to the transversalis fascia. The intestine can then be stitched to the abdominal wall by sutures involving all but the mucous coat. Though this method is neat and desirable as it places large peritoneal surfaces in contact, yet it uses valuable time and is not at all essential to success. The intestine can be fastened directly to the skin margin by sutures which transfix all the coats of the gut and the whole thickness of the abdominal parietes, or only the transversalis fascia and skin, or in case of thick abdominal walls, the skin alone. The main point in any case where the intestine is open from the beginning is to obtain firm, tight suturing and accurate apposition. The peritoneal surface of the intestine and the raw surface of the abdominal wound are capable of forming a firm union probably as soon as if two peritoneal surfaces were brought in contact.

It is desirable to leave the closure of the remainder of the abdominal wound until the bowel has been attached to the incision, as it may be necessary to make a final irrigation.

Closure of Abdominal Incision, Complicated by Distentions.—When an artificial anus has been made the distention subsides so rapidly that there is generally no difficulty in closing the abdominal

wound. In other cases of obstruction, however, where resection has not been necessary the protrusion of distended intestines often causes great embarrassment when the operator attempts to close the incision.

There are several methods of meeting this difficulty: by compressing with large flat sponges, or by tucking a wet towel around the intestines under the abdominal parietes, and closing the wound over this, the towel being gradually withdrawn as the abdominal sutures are fastened. I think, however, that it is very unsafe to close an abdomen when the intestines are enormously distended. The dangers to be feared from were abdominal distensions unconnected with peritonitis are very great. This distension, incident to paralysis of the intestinal muscles is the cause of death, in those cases to which Tait has called attention, when, after ovariectomy a patient will die with an enormously distended abdomen and all the symptoms of peritonitis, and yet post-mortem examination will reveal no inflammation of the peritoneum.

The great pressure within a tympanitic abdomen can be realized and all of us who have made autopsies upon persons who have died of peritonitis, where it often requires the exercise of considerable strength to insert the hand between the intestines and the parietes. Such pressure exerted against the diaphragm, impedes the action of the heart and lungs, already weakened by the anasthesia, and may cause sudden death from heart failure.

And, again, intestines which are overdistended by gas are themselves subjected to a form of obstruction caused not only by the muscular paralysis incident to overdistention, but also by the sharp flexures or kinks in the bowel produced by traction upon the mesentery. And finally, in many cases of intestinal obstruction the coats of the bowel have become so attenuated and degenerated from prolonged tension, that there is continual danger of a rupture unless this tension is quickly relieved. For these reasons I think it is safer to empty the intestines by incision before closure, so that the patient shall not leave the operating table with a distended abdomen.

Subsequent Obstruction.—A continuation of obstruction is always to be feared even after the relief by operation of the original cause. Thus a loop of intestine strangulated by a band or a diverticulum may be completely relieved by the surgeon, and yet, all the signs of obstruction may continue, and the patient die unbenefited by the operation. This continuation of obstruction may depend upon distention, upon general peritonitis, or upon local paralysis in the damaged portion of intestine; this last cause frequently producing death in strangulated hernia where fecal vomiting and constipation continue even after reduction of the bowel.

In some cases the strength of the patient is sufficient to tide him over the period during which the intestines are recovering themselves. In other cases where the patient is *in extremis*, the alleviation furnished by relieving the original obstruction is not sufficient, and more radical treatment must be instituted. In these latter cases I think that in addition to relieving the strangulation a temporary artificial anus should be made as the only means of furnishing this essential quick relief. Two months ago I assisted Dr. Joseph Price at a laparotomy for intestinal obstruction caused by pelvic peritoneal adhesions. The obstructed bowel was freed, and the perviousness of the intestinal tract restored. Before closing the abdomen a loop of ilium was incised and a considerable quantity of flatus and fluid feces escaped—with a marked beneficial effect immediately perceptible in the character of the pulse and respirations. The intestinal incision and the abdominal wound were closed and the patient returned to bed. All the signs of obstruction, however, continued, there being absolutely no escape of flatus or feces, and the patient died in twenty-six hours. Post-mortem examination showed that the operation had been thoroughly performed, and that the obstructed portion of intestine had been entirely relieved. If in this case the incision in the ilium had not been closed but had been attached to the abdominal wound as a temporary artificial anus, so that the relief, so noticeable when the gut was first incised, had continued, I think that the chances of recovery would have been much better.

It may in some cases be a difficult matter to decide upon the necessity of an artificial anus for the purpose we are considering. In doubtful cases, however, it is best to err on the safe side and to make one. And if in any case of intestinal obstruction, after the abdomen has been closed, the obstruction is found to continue, it is not even then too late to re-open the incision and to perform enterotomy.

Artificial Anus for Peritonitis.—The value of this procedure is so great that I would urge its use not only for the peritonitis and paralysis following strangulation of the intestine, but also in peritonitis or intestinal paralysis of any other origin where there is great abdominal distention and fecal accumulation.

I have seen death result in two cases of typhlitis causing general peritonitis—with absolute constipation, fecal vomiting and all the symptoms of acute obstruction. In one case the abdomen was opened and the peritoneum was irrigated and drained. The obstruction, however, continued and the patient died. In the great majority of cases of purulent peritonitis the recognized surgical treatment of irrigation and drainage is sufficient. In all cases the irrigation and drainage benefits the inflamed peritoneum. It, however, takes some time for the intestines to recover themselves so

that the paralysis and consequent obstruction are overcome, and during this time, the feculent vomiting, the absorption of feces, the constant hiccough, the impediments to respiration and heart action may kill the patient before the results of the irrigation have time to show themselves.

It is in such cases that the additional relief afforded by enterotomy may save life.

If an abdominal drainage tube is also used the artificial anus can be made by Nélaton's incision for enterotomy, in either iliac region.

Continual Irrigation of the Peritoneum.—In cases of intestinal obstruction where there has been much peritoneal irritation, or where the condition of the strangulated bowel is doubtful and yet resection is not performed, continual irrigation of the peritoneal cavity with warm water for several hours after the operation is of great value. Such irrigation is of value: by continually washing from the peritoneum all septic products; by keeping the drainage tubes free, and the peritoneum open to drainage for the longest possible time; by keeping the irritated intestines continually floating in, or surrounded by a clean unirritating fluid, thus preventing the adhesion and matting together of knuckles of bowel which is such a frequent cause of subsequent obstruction.

Continual irrigation can be practiced by using two or more drainage tubes, or one reflux tube. Upon one occasion I used two glass tubes placed in the pelvis, and one large rubber tube running from the epigastrium to the lower angle of the abdominal incision. The case was one of intestinal obstruction caused by peritoneal adhesions and kinking of the ilium. There were several ounces of pus in two pockets in the pelvis; the sigmoid was gangrenous at one spot and there existed a fistulous opening into it; and about 12 inches of ilium was in such a condition that I should have resected it, had I not been afraid of the patient dying upon the table. The abdomen was flushed with warm distilled water every two hours, for twenty-four hours after the operation. The water being injected into one tube and allowed to flow from the others until it became clear. I think that it was this irrigation which saved the patient's life; all septic products being washed away from the diseased gut until healthy reaction became established.

In conclusion I will summarize the points to which I beg to call the especial attention of this Section:

The use of an exploratory laparotomy in cases in which the diagnosis of intestinal obstruction is doubtful.

The necessity of very early operation in the treatment of this condition.

The necessity of a temporary artificial anus, after resection for obstruction.

The value of a temporary artificial anus, as a

means of avoiding subsequent obstruction, when there has been great abdominal distension and fecal accumulation.

And finally, in some cases, the value of continual irrigation of the peritoneal cavity.

THE IMPUTATIONS ON BETA-NAPHTHOL

Read in the Section on Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY JOHN V. SHOEMAKER, M.D.,
OF PHILADELPHIA.

Naphthol, as I remarked in a paper read before the Philadelphia County Medical Society, on October 17, 1883, published in *THE JOURNAL* on November 3, 1883, stands in the same relation to naphthaline as phenol does to benzol and cresol to tuhuol. If one of the six molecules of hydrogen in benzol is replaced by hydroxyl, phenol is obtained, and in a similar manner are cresol and naphthol formed. The inference may therefore be safely drawn, through this analogy of formation and similarity of constitution, that their products are similar, and in consequence their general effects, so far as toxic quality is concerned, similar in action on the animal organization. This inference I accordingly drew, and proceeded to experiment with β -naphthol as probably affording a product equally antiseptic and harmless with that offered by the other form.

To do this effectively it was of course necessary to discard the commercial varieties, which contained sulphur and sulphurous acid and yield when sublimated (besides the naphthol crystals,) sulphuretted hydrogen, thionaphtholes, carbolic and cresylic acid, thiophenols and other products, in order to secure a perfectly pure product. This I accomplished by passing a current of steam through an aqueous solution of naphthalin, expelling all volatile by-products, and thus obtaining naphthol in a state of the greatest purity. The first product is of the beautiful silvery scales which I exhibited, supplemented with others shown illustrating the effect of the further sublimation of the product, resulting in elegant white crystals; which procedure, however, as I remarked at the time, has the effect of producing a slightly pungent and disagreeable smell, evidencing a retrograde metamorphosis. So much for securing a chemically pure product.

Now as to the other mode of preparation, the product of which is not pure. The method of producing commercial naphthol is the one usually employed in effecting hydroxyl substitutions. This consists in first producing monosulphs (substitutions accomplished by means of strong sulphuric acid at certain temperatures), and by then melting the monosulphonated compound with sodium hydrate. In the case of the naphthalin treated thus

with sulphuric acid, the naphthalen-monosulphonic acid is produced according to the formula, $C_{10}H_8 + S. O_4H_2 \cdot C_{10}H_7S. O_3H + H_2O$. This, upon being melted with sodium hydrate, yields naphthalin hydroxyl, or naphthol, as per formula $C_{10}H_7S. O_3H + 2(NaOH) = C_{10}H_7S. O_3Na + OH_2 + NaOH = C_{10}H_7OH + S. O_3Na_2 + OH_2$. This naphthol is usually purified by distillation and brought to market as crystalline masses of a reddish color and of a pungent, disagreeable odor, as shown by the specimen which I exhibited to the Society.

Simply dependent upon difference of temperature employed in the sulphonation of the naphthalin, α -naphthol or β -naphthol is produced by these processes.

At the time when I read my paper before the Philadelphia County Medical Society, there was little question of the relative merits of α -naphthol and β -naphthol. The assumption in my mind was, for the reasons assigned, that there could be no essential difference in the qualities of the products. Since that time, however, the question, then arising, as to their relative merits finds frequent mention in medical journals and is now likely to be sifted to the bottom. The question is determinable on a sufficient amount of empirical evidence, and in no other way. I have said that the difference in the two products is dependent simply upon difference of degree in the heat in the evolution of the products, and I have also given presumptive proof that sublimation pushed beyond a certain point produces ill-effects in the product. There is no evidence yet before me which would go to show that the products of β -naphthol with which experiments were made to its discredit were pure, or were anything else than the commercial article, which I have already shown to be impure. Nor could the answer be made to this position by saying that both products probably stood upon the same footing, as being of the commercial kind, both impure; for as the condition which produces different varieties is dependent upon more or less heat, it may very well be that difference of degree in heat affects also in different degrees the elimination of by-products. In one word, the basis of experimentation, if not scientific, must make all reasoning from it unscientific. Therefore I have nothing to say on this topic, but that the question of whether or not the β variety of naphthol is poisonous is, so far as published statements go, not determined, and that it cannot be conclusively settled until commercial products are ruled out and a sufficient number of experiments in competent hands have been tried. So far as I have seen comments upon the use of β -naphthol to its disadvantage I have seen it assumed that α -naphthol has no toxic quality at all. It is not so explicitly stated but the inference is left in the reader's mind that α -naphthol is not a toxic, and that β -naphthol is. I have now cleared the way to the true basis

for the determination of the question. The question is not whether β -naphthol has or has not some toxic quality, but which of the two naphthols has, if any, more toxic quality than the other. To the determination of the question of absolute poisonousness I contribute my mite by repeating some of the results of my experiments and practice already published and since amply confirmed and increased. It is true that my results, relating only to β -naphthol, are not relevant to the point as stated, but they at least afford some contribution to the general question of absolute, not relative, toxic effect. They will at least, as far as they go, show that the pure β -naphthol is not poisonous in any sense beyond that in which many medicines are poisonous. In the broadest sense anything not food is poison and even through idiosyncrasy what is to ordinary persons food is sometimes to others poison, as witness the effect of strawberries and many other foods upon certain subjects. Ascending from this relativeness of poison to abnormal pathogenic conditions lies an immense range of poisonous qualities inherent in certain forms of matter, until we reach what we conceive of as true poisons merely because they present themselves in small bulk.

I have dissolved half a grain of pure β -naphthol in 3,000 parts of water and have taken it myself. It produced some heartburn and dizziness and a slight sensation in the lumbar region. These symptoms disappeared after taking the same dose for several days in succession, the urine exhibiting traces of naphtholic compounds, but no albumen or blood. I then increased the dose to four grains per day for six successive days, followed by no untoward symptoms, increased warmth in the stomach after inhibition being followed by increase of appetite. Dr. Schofield, of Albany, reported to me that, at my request, he had used the β -naphthol experimentally, and afterwards largely in practice in the Albany Hospital, where its excellence is now firmly established, being used to the almost entire exclusion of other antiseptics for wounds, and for the disinfection of the wards of the hospital. His experience, as well as that of Kaposi and others, has led me to employ it in both private and hospital practice with eminent success. I found that it fully sustained the claim of Kaposi as to its efficacy in scabies, psoriasis, and chromophytosis, as well as in some of the chronic forms of eczema, in which it not only allayed the attendant itching, but lessened infiltration. I have said that I found it a most useful detergent and deodorant in treating wounds and indolent ulcers, in removing the fetor and establishing healthy action of the parts. In aqueous solutions of half a grain to the fluid ounce of water, I have used it to great advantage, as a vaginal injection, in leucorrhœa and uterine carcinoma. Equally efficacious have I found it in both male and female gonorrhœal affections.

In diphtheritic affections it forms a most useful gargle, and removes well the fetor of catarrh and other affections of the buccal cavity. In my hands, combined with lard or gelatin, it has also been very effective in squamous and fissured eczema.

To proceed further would be only needlessly to repeat the account of my experiments and practice, published in *THE JOURNAL*, of the date mentioned, so I here pause with the mere statement that I have seen no reason since to change my opinion of the efficacy and innocuous characteristics of β -naphthol, if pure, and to reaffirm from my own experiments and from those made at my instance, that the β -naphthol, when in that condition, has been found through long trial one of the most useful medicines and medicaments that have ever come within the physician's power to employ in the treatment of various complaints. Naphtha and petroleum, those wondrous reservoirs for the needs and arts of mankind, have nothing in their repertory greater than this to boast. Late experiments of mine with it in the treatment of obstinate constipation have had results, to me, of the most surprising and gratifying kind. I conclude, therefore, by reasserting all that I have previously said elsewhere of the excellence of pure β -naphthol. As none of my patients have experienced from its administration the toxic effects mentioned in some medical journals, I cannot be brought to consider it absolutely toxic. I await the result of properly conducted experiments to determine the relative toxic quality, if any toxic quality inhere in them, of the two varieties of naphthol.

TWO CASES OF MELANOTIC TUMORS IN THE LUNGS.

BY F. WATSON TODD, M.D.,
OF STOCKTON, CAL.

I have failed to find, in a careful reading of the best medical journals of our country, for twenty-five years, a case in any respect like two that have occurred in my practice, a report of which, I have thought, was due to my brethren of the profession, to whom I owe so much.

In the spring of 1864, while living at Auburn, Cal., I was called about 9 A.M. one day, to see a Mr. R., about 60 years of age. I found him in bed, coughing up and expectorating, but not vomiting, large quantities of black grumous blood, since midnight. His wife told me he had returned the evening before from Sacramento, where he had been for a month, under the care of Dr. F., whom I knew as one of the leading physicians of that city, and who, she said, had been treating him for some hepatic disease.

On auscultation I found below the right nipple, lower lobe, a considerable tract impervious to air, but a clear vesicular murmur elsewhere through-

out the right, and the whole of the left lung. The heart sounds were normal, no increase of temperature, no apparent cancerous cachexia. I had no difficulty in arresting the hæmorrhage, and wrote to his Sacramento physician describing his condition, and received an answer, saying that I was mistaken in the belief that I had found disease implicating the right lung; that he was suffering from chronic hepatitis, and that I would find that the hæmorrhage was from the stomach, and that it would prove to be salutary.

The second day his improvement continued, and he was put on the *tr. ferri chloridi*. At my morning call, on the third day, I found my patient dressed, and at the table, with a good sized beefsteak, eggs, warm rolls, and coffee before him, with which he was enjoying the morning paper. After a jocular remark I dismissed the case, and rode to the country. Upon my return to town an hour afterwards, a gentleman whom I met said: "So Mr. R. is dead?" I replied "no," and told him how I had left him an hour before. "Nevertheless he is dead," said he. It was so. When he had finished breakfast, his wife, wishing to sweep the room, had thrown over his head a light covering, that he might not inhale the dust, and when she removed it she found that he had passed quietly away. In spite of much opposition I was permitted to make an autopsy; a promise having been exacted that I would confine the examination to the thoracic cavity. Upon removing the sternum I verified my diagnosis of pulmonary disease, by the discovery of two melanotic tumors, the size of half a hen's egg, and the collapsed shriveled remains of a third, from which came the black blood. There was extensive pigmentation of the surface of both lungs, and a large ante-mortem clot in the left ventricle, which, I presume, was the immediate cause of his sudden death, as there had been no more hæmorrhage.

In November, 1872, I had removed to this city, and at 11 o'clock one night was called by the landlord at my hotel to see Captain F., a bachelor, æt. about 55 years, whom I found in the office, leaning over a cuspidor, breathing with great difficulty, with a cold moist surface, small frequent pulse, and expectorating, with almost no cough, a considerable quantity of frothy serum, which had a slight pinkish tinge. These symptoms soon gave way under the use of the fl. ext. ergot and belladonna, and the Captain had a good night. I made, the next morning, a careful examination, and found, on auscultation, a dull space in the right lung below the nipple, the size of the palm of a small hand. I failed to find evidences of disease in the heart, kidneys, or any other organs. My patient returned to his mine in the mountains, some eighty miles away, by stage. In a few weeks he visited Stockton again, and again I was called, about the same hour at

night, to the hotel office, to find the Captain in the same condition described above. He was relieved as before. It seems that he had been given a bed in a cold room, as formerly, and as soon as he had got between the cold sheets the paroxysm began. Whether the medicine he took, or the mountain air had any effect or not, he was free from these attacks at home, and enjoyed apparently fair health.

The following April I requested him to meet me in San Francisco, when our State Medical Society would be in session. He came, and the first night in that city, had a severe attack. He was seen by two of the most eminent men of the city, Professors in each of the medical schools, and each declined to express an opinion as to the nature of the disease. Learning from him that he would that summer visit his old home in Virginia, I induced him to go by way of New York, and gave him a letter to the late eminent Professor F., with a detailed statement of his case. He was examined carefully by that gentleman, who was kind enough to write me his opinion in full, in which he said that he, with his son, the present distinguished Professor, of New York City, had found slight hypertrophy of the left ventricle of the heart, but that there was more serious disease of the kidneys, the urine showing sufficient albumin to warrant a diagnosis of chronic interstitial nephritis.

The Captain married after his return to this State, had two children, removed to Stockton, and a few months after had a hæmorrhage, not severe, of dark grumous blood. This was repeated every few days with little cough, until he became so weak that he was confined to his bed, and finally died from exhaustion. An autopsy, made in the presence of a half dozen of the leading physicians of the city, revealed large melanotic tumors of the lower lobe of the right lung, from the rupture of one of which came the peculiar hæmorrhage.

As in the former case, I could only get permission to make the inspection upon giving a promise that I would confine it to the thorax, consequently I was unable to verify the diagnosis of renal disease, but there was no hypertrophy of the heart ventricle. The absence of indications of malignant cachexia made the diagnosis in both of those cases difficult, and in neither could I do more than fix the seat of the disease, and even this found dissent from some of the ablest men of our profession.

May 19, 1888.

THE MEDICO-CHIRURGICAL COLLEGE of Philadelphia and the Philadelphia Dental College have placed a contract for a large building to accommodate both schools.

MEDICAL PROGRESS.

CODEINE TO RELIEVE PAIN IN ABDOMINAL DISEASE.—DR. T. LAUDER BRUNTON says of the use of codeine to relieve pain in abdominal disease: The class of cases in which I have used it is, I think, somewhat different from those in which it has previously been recommended, because while Barbier, Aran and others have chiefly employed it in gastralgia and painful disorders of the stomach, I have used it chiefly in pain affecting the intestines and lower part of the abdomen. The kinds of cases in which I have used it have been very varied. As examples I may shortly described one or two. In one case which I saw with Dr. Eccles, there was high temperature, intense pain in the right iliac fossa, with considerable swelling, so that there could be little doubt that there was inflammation around the cæcum, although examination after the acute symptoms had subsided showed that there was also pelvic cellulitis. In this case one grain of codeine, given in the form of a pill, relieved the pain at once, and repetition of the dose whenever the pain began to return prevented its becoming at all severe.

In another case, seen with Dr. Philpot, of Croydon, a lady, aged 50, had pneumonia of the right base, a greatly dilated heart with very irregular action, pulse so rapid and weak that it could hardly be counted, and pain over the epigastrium and spreading out from it. She was slightly jaundiced, and a tumor was felt in the right lateral abdominal region, which descended with respiration, but was partly covered by intestine, and could be moved from side to side, so that it seemed to be renal rather than hepatic. As no *post-mortem* examination was obtained the exact diagnosis could not be established, but the administration of codeine in half-grain doses relieved the pain, as Dr. Philpot said, "as if by magic."

In another case, seen with Dr. Pardington at Tunbridge Wells, there was pain in the abdomen depending upon a mass of impacted feces in the transverse colon. In this case codeine seemed to be especially indicated, as one wished to relieve the pain without interfering with the action of the bowels. In grain doses codeine relieved the pain, and the use of copious enemata, aided by washing out the stomach, cleared away the impacted mass which had given rise to the disturbance. I have tried codeine in cases of long-continued abdominal pain for which no definite cause could be assigned, as no tumor could be felt, and the functional disturbance did not seem sufficient to warrant a diagnosis of malignant disease. I have tried it in cancer of the liver and pancreas with success in relieving pain, and also in numerous cases where the age of the patient, the presence of diarrhoea, tenderness on pressure, and visible per-

istaltic movements, and thickening of the gut, easily perceptible on palpation, led to the diagnosis of malignant disease in the intestine, although inability to obtain a *post-mortem* examination prevented the confirmation of the diagnosis. In such cases I generally begin with half a grain, in the form of a pill made up with extract of gentian, three times a day; and if this is insufficient to control the pain I increase the dose to a grain, and give it as frequently as seems necessary. As a rule, I find that it does not produce drowsiness, nor has it interfered with the digestive functions.

To sum up, the results I have obtained from the administration of codeine have satisfied me that it has a powerful action in allaying abdominal pain, and it can be pushed to a much greater extent than morphine without causing drowsiness or interfering with the respiration or with the action of the bowels. It is, therefore, specially indicated in such a case as Dr. Philpot's, which I have already mentioned, where the dilated heart and consolidated lung tended to make one afraid of morphine. Codeine is also specially indicated in a case like Dr. Pardington's, where one wished to relieve the pain without interfering with the action of the bowels. On the other hand, in cases where there has been much diarrhoea, as in some cases of malignant disease of the colon or rectum, the absence of any tendency to lessen peristaltic movement is rather a disadvantage to codeine as compared with morphine or opium.

I have found that in cases of long-continued enteralgia without organic disease, it has continued to relieve pain for months together, without the dose being increased beyond one grain three times a day, and I found the same to be the case where the presence of a tumor, in addition to other symptoms, had led to the diagnosis of malignant disease.

It is interesting to follow the vicissitudes of a drug, and to notice how its use extends or diminishes until at last it finds its right place and maintains it. Thus digitalis, while mentioned in the London *Pharmacopæia* of 1721, was excluded from that of 1746. It again appeared in 1788, and since then it has held its place.

Possibly codeine, after falling into almost complete disuse as an analgesic for many years may again regain a more or less important place amongst the remedies which enable us to relieve pain.—*British Medical Journal*, June 9, 1888.

OLD-STANDING EMPYEMA SUCCESSFULLY TREATED BY "PERFLATION."—DR. CHARLES E. OLDMAN writes: The following case is of interest, and suggests a more extended trial of this method of treatment, as recommended by Dr. Wm. Ewart in *The Lancet* of July 31, 1886.

F. A., aged 18, had scarlet fever in July, 1882, followed by an attack of pleurisy, with effusion terminating in empyema, which was first opened

by me in consultation on January 29, 1883. Some time after this he was admitted into Guy's Hospital under Mr. Bryant, when a free opening was made, and the usual method of treatment by irrigation was carried out, but with little benefit. After a long absence in the country he was admitted a second time into Guy's Hospital, when a portion of rib was resected, so as to allow better drainage and facilitate the washing out of the pleural cavity; still the discharge continued to be very profuse, in spite of every attention being paid to his general health and more than one visit to the seaside. On April 27 of this year, being five years and three months since the date of the first operation, I commenced the method of treatment by "perflation," or the injection of air which has passed through a strong solution of carbolic acid. For this purpose a solution of 1 to 10 was used. At first considerable difficulty attended the insertion of the cannula, owing to the narrowing and tortuosity of the sinus leading into the pleural sac, which had not been occupied by a drainage tube for many months, so that a very small one was used; but this did not prevent a sufficient supply of air being injected, although it somewhat retarded the escape of the pus. The operation was repeated once daily by the patient himself. At first the discharge appeared to be but little influenced by treatment until about the eighth and ninth days, when a large quantity of very offensive pus was expelled—indeed, so offensive was it that the inmates of the house had to leave it for an hour or two after the patient had used the injection. After this the discharge diminished considerably, becoming less offensive, and finally ceased altogether on the eighteenth day. He is now quite well, and daily gaining strength and flesh. During the first injection urgent symptoms of dyspnoea and fainting occurred, quickly passing away, however, on discontinuing the injection and the patient assuming the horizontal position. This I take to have been caused by the intra-thoracic pressure having become suddenly increased, and the action of the heart being interfered with thereby. It only occurred once, and probably would not have arisen at all if the opening had been large enough to allow of the pus escaping in a corresponding ratio to the admission of the air, or if there had been a counter-opening. Altogether it is a very simple and satisfactory method of treatment.—*Lancet*, June 16, 1888.

THE HOT INTRA-UTERINE DOUCHE IN PURULENT ENDOMETRITIS.—In a paper read before the Gynæcological and Obstetrical Society, of Baltimore, May 8, 1888, DR. W. M. E. MOSELEY, called attention to a method of treatment that, although not new, has received far less attention than its merits deserve, for in his experience it has been perfectly safe, easy of application, has caused the patient no pain or serious after-symptoms, and

above all has been promptly *curetive* in its effect; *free* douching of the uterine cavity with warm, or rather hot water, either plain or medicated. The water can be injected with a fair amount of force; it reaches all portions of the endometrium, washes the discharge out of the mouth of the glands, and so reaches parts that cannot be reached by the ordinary applications, and has no destructive effect on the mucous membrane as do the more active caustics.

It is important to have the cervical canal freely enough dilated to permit a ready exit of all the water injected, and in many cases of any considerable standing such will be found to be the case. He has used a double catheter and has injected directly through a small flexible male catheter, and has found both methods equally satisfactory. One thing he would insist upon, is the use of a large amount of water, from one to two gallons, and at a temperature of from 100° to 110° F. He has used the water clear and also medicated, and both have given equally satisfactory results.

This method of treatment is perfectly rational, and is the procedure that any one would follow in any other cavity containing pus.

He believes that we would get much better results from intra-uterine medication, if we took the precaution to first *thoroughly* remove all secretions from the endometrium before making any application. This he has tested, and with only the happiest result.

THE COMPOSITION OF NORMAL URINE.—MM. YVON and BERLIOZ have recently presented a memoir on this subject to the Académie des Médecine. Among 6,000 analyses they chose as data those in which there was no sugar, no albumin, and no bile pigments, and which appeared to accord with the mean elimination now admitted. Of these there were 661, including 347 from males and 314 from females, all adults, and all French. The following table shows the results:

	Males.	Females.
Quantity in 24 hours - - - -	1300 cc.	1100 cc.
Density - - - - -	1022.5	1021.5
Urea, per litre - - - grams - -	21.50	19
" " 24 hours - - " - - -	26.50	20.50
Uric acid per litre - - " - - -	0.50	0.55
" " 24 hours - - " - - -	0.60	0.57
Phos. acid " litre - - " - - -	2.50	2.40
" " " 24 hours " - - - -	3.20	2.60

It is seen that the quantity of the various elements eliminated is greater in males than in females, though in the case of uric acid there is but little difference, this being due to the less active life of females. The ratio of the quantity of uric acid eliminated in 24 hours to the amount of urea is in males 1:44.50; in females 1:36.50; mean 1:40.50. The ratio of urea to phosphoric acid is about 1:8 instead of 1:10, as has been supposed.—*Bulletin Médical*, June 20, 1888.

THE
Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,

CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JULY 14, 1888.

A SECTION OF PHARMACY AND MATERIA
MEDICA.

Exhibitions of pharmaceutical preparations, surgical instruments and appliances, and to some extent periodicals and books, in connection with the annual meetings of the American Medical Association, and with many of the State Medical Societies, have been increasing in magnitude from year to year, until they undeniably attract no inconsiderable part of the attention of many of the members attending these meetings. As stated in the *American Lancet* for June, 1888, the "exhibition is simply a collection of drummers with their samples. They are polite, intelligent and obliging, but after all they are tradesmen pure and simple, whose sole object is to make money for the firms they represent." And we may add that, as such tradesmen, they have the right to assemble in any city where the Medical Association may hold its annual session and procure such rooms for their exhibition as they please, and conduct it under such regulations as they may adopt. The constitution and by-laws of the American Medical Association contain no provision for any such annual exhibition; and the Committee of Arrangements are not required to give any other attention to the subject than to be sure, in engaging the necessary rooms for the accommodation of the meetings of the Association, that no such exhibitions shall be allowed in the vestibule, ante-rooms, or halls leading to or adjoining any of the rooms to be occupied by the Association or any of

its Sections. Beyond thus securing the accommodations necessary for the meetings and business of the Association on such terms as will prevent exhibitions and obstructions of every kind from being placed on the same premises or in the entrances thereto, we do not see how the Association or its Committee of Arrangements can rightfully have anything to do with combinations of pharmacists, food and drink manufacturers, instrument makers, etc., for the joint exhibition of their various samples.

So far as the real interests of the medical profession are concerned, and especially the interests of the members of the American Medical Association, there is no need for any such extensive exhibit of incongruous materials. The several Sections of the Association are the proper places in which new remedies or new preparations of old ones, new or improved instruments and appliances, should be presented by some member who has investigated the article and deems it worthy of the attention of the profession. It is in the appropriate Section that all alleged novelties and improvements can be most advantageously examined and their merits and demerits be intelligently discussed. It is doubtful whether a single new remedy or new appliance in surgery of practical value has been found during the last thirty years, that has not been either described or exhibited in some one of the Sections.

The establishment of a special Section of the Association, to be called the Section of Pharmacy and Materia Medica, to supersede the outside exhibitions, was suggested in the *American Lancet*, and in some other periodicals. If the proposed new Section is to be made a room for the general exhibition of drugs and pharmaceutical preparations, the size of the room and the expense and time required for fitting it up would add materially to the labor of the Committee of Arrangements and to the orders on the Treasurer of the Association; and yet perhaps be able to present a less variety of articles than could be readily seen in half of the regular apothecary shops in the same city. But if the object is to be the presentation of only really new remedies and improved preparations and have their value carefully canvassed, the present Section of Practice of Medicine, Materia Medica and Chemistry is better constituted for doing the work well than it could be done by a Section composed of pharmacists and

students of *materia medica* only. The presence of a large proportion of practitioners of actual clinical experience is essential for the proper consideration of such articles as are here intended.

TYPHUS ICTERODES.

DR. GEORGE DIAMANTOPOULOS, of Smyrna, has just published, through Urban and Schwarzenberg, of Vienna, a volume of 135 pages on "*Typhus Icterodes of Smyrna*," which appears at times endemically, and from time to time epidemically on the coast and in the islands of the Ægean Sea, generally in the summer and autumn. From a study of the disease during the past fifteen years Diamantopoulos concludes that it is an acute, miasmatic, non-contagious disease. It is a disease *sui generis*, and notwithstanding the great symptomatic similarity between it and many classic affections, yellow fever, Griesinger's bilious typhoid, and many cases of bilious remittent fever, it is identical with none of these. Thus far its etiology is obscure.

The symptomatology of the affection is not uninteresting. The disease begins with a very intense chill, or with a simple rise of temperature, with, in many cases, an intense headache; the temperature usually going, on the second day, to 39.5° or 40° C. There are pains in the muscles and joints, especially of the lower extremity, pains in the spine, especially in the lumbar region, a feeling of muscular weakness, so that the patient cannot sit up in bed, oppression of the chest, and later præcordial anxiety, the sensorium is dull, the facial expression stupid and apathic, and the patient is anxious and restless, casting himself about in bed, and is sleepless. From the beginning and through the first stage of the disease the face is red and turgescient, the eyes red, injected, moist and glistening, and to a certain extent prominent, the facial expression being a good deal like that of a drunken man. The tongue is broad, looks swollen, is moist and whitish, whitish-yellow, or yellowish-brown. The epigastrium is sensitive on pressure, as are the hypochondriac regions. The patient complains of a sensation of tension and fullness, is somewhat swollen, and gives some resistance to palpation. The liver is enlarged, and the spleen to a less extent. As a rule, the mesogastrium and hypogastrium are soft and not sensitive. The

ileo-cæcal region shows nothing abnormal. The muscles of the extremities, especially of the calves and forearms, are sensitive to touch, and later contract spontaneously and on pressure.

On the second or third day vomiting appears, containing ingested food at first, generally uncolored, but later, sometimes even at the beginning, it consists of "bilious," yellowish-green, watery masses. It occurs tolerably often, is often obstinate, and may be caused by pressure in the gastric region. In such cases the stomach is sensitive, refusing the slightest quantity of food or medicine. Constipation appears at some time during the first two or three days, to be replaced by copious watery, yellow colored stools. In the subsequent course of the disease dysenteric, bloody-mucous stools appear in many cases, with colicky pains. A prominent and frequent symptom is a feeling of burning and contraction in the pharynx, which often makes swallowing difficult and painful; but besides slight redness and swelling of the mucous membrane there is nothing abnormal about the throat. There is a slight cough in many cases, with bronchial râles, signs of laryngeal catarrh, and abnormal sensations in the larynx and trachea. During the first few days the sensorium is clear as a rule, though delirium may occur in severe cases, and may be so intense as to endanger the life of the patient.

The skin in the first stage of typhus icterodes is usually dry, but sometimes there is slight sweat, which does not affect the condition of the patient. The urine is changed in quantity and quality not only in different cases, but even in the same stage in individual cases. Not infrequently it contains albumin. In many cases there is strangury, dysuria, or complete suppression, lasting for a longer or shorter time, and often uræmia, eventually causing death.

On the third or fourth day there occurs marked remission of the fever, or often complete absence of fever, beginning in the evening and lasting through the night. This marks the beginning of the second stage: the patient feels better, sleeps a few hours, his whole appearance is changed, the face becomes pale, the redness of the eyes diminishes, the pulse falls to 90 or 100, is softer and weaker, and the nervous symptoms moderate, but do not disappear, though in some cases they become more intense, and others appear. Icterus appears in the second stage, on the fifth or sixth

day. At first the conjunctiva becomes yellowish, and soon after this the whole cutaneous surface takes on a golden-yellow, orange-yellow, or greenish-yellow appearance. The urine also becomes yellowish, and contains bile pigment. A very frequent symptom of the second stage is copious epistaxis, often difficult to control, and recurring. Another constant symptom is a generally strong and regular, though sometimes irregular pause of the pulse every 5, 6, or 7 beats, which occurs a short time before the appearance of the icterus. After from a few hours to two days this irregularity may disappear, initiating a favorable third stage, or it may continue for a longer time, marking a severe third stage, which may end fatally.

There are hæmorrhagic cases, in which bleeding takes place from different organs: the stools and urine are bloody, and vibices, petechiæ and blood-effusions appear in the skin.

In mild cases there is a remission of all the symptoms after the appearance of icterus, and convalescence is established by the seventh or ninth day. In severe cases, on the contrary, death may occur early, before icterus has fully appeared, or during its appearance. In such cases the severe symptoms remain unchanged, or become more severe, the pupils dilate, delirium and coma supervene, and collapse and uræmia end the scene. In still another class of cases the disease is more prolonged, and the fever again rises after the remission, and a typhoid stage comes on, of varying intensity according to the severity and duration of the morbid process. In this stage all the symptoms are very similar to those of typhoid.

Such is the general symptomatology of this peculiar disease, which may possibly become in the future more than a curiosity to American physicians.

THE RELATION OF DIABETES TO HEART DISEASE.

Diseases of the circulatory apparatus, and especially of the heart, occupy but a comparatively small space in the literature of diabetes, either clinical or anatomical. JACQUES MAYER, of Carlsbad, attributes this partly to the fact that in searching for the pathogenesis of diabetes, pathologists have given most attention to the organs

supposed to be directly concerned in the production of the disease. Seegen, in his work on diabetes, in which he published 140 cases, has but little to say of the symptomatic and physical relations of the heart and blood-vessels. In 11 cases only is the condition of the heart mentioned; in 6 cases it was normal, there was hypertrophy of the right heart, a feeling of agitation or palpitation in the cardiac region, disposition to angina pectoris, slight mitral insufficiency, and a systolic murmur of the left heart, in one case each. In his anatomical considerations of diabetes there is but little material, drawn chiefly from Rokitansky's 30 cases. Cantani's lectures on diabetes are as meagre of information concerning the state of the heart and vessels as is Seegen's book.

Senator mentions more specifically the state of the circulatory organs in diabetes, and says that there are no striking or characteristic symptoms on the part of the heart and vessels in this disease; that the arteries are often atheromatous, but not exceptionally often. English authors have mentioned the atrophy and fatty state of the heart-muscle, and Donkin mentions that in consequence of the faulty propulsive power of the heart there is dropsy, or sudden death from syncope; that there is usually marked atrophy of the muscular system, with small and frequent pulse. R. Schmitz called attention some years ago to a complex of symptoms in advanced cases of diabetes, consisting of shortness of breath, a not infrequently suddenly appearing anorexia, vertigo, somnolence, and tendency to syncope, which symptoms he attributed to relaxation and fatty degeneration of the heart. In 80 out of 109 cases Schmitz noted soft and small pulse, sometimes accelerated, again very slow, cardiac impulse weak at all times, scarcely perceptible, and cardiac and vascular tone weak and very indistinct. Leyden called attention to asthma in diabetes as being of the type of cardiac asthma, though he attributed the attacks to physical disturbances.

Lecorché published a few years ago 14 cases of diabetic endocarditis—endocarditis complicating subacute and chronic diabetes, the symptoms of the endocarditis being the usual symptoms of this affection. He attributed it to the action of the saccharinized blood upon the endocardium. Vergely asserted, in 1883, his belief in a relation between angina pectoris and diabetes, and published four cases of diabetes in which there was

angina pectoris, even in the first stage of the diabetes, but in which there was no other cardiac disease than the angina. Frerichs seems to find no particular relation between diabetes and heart disease except the cardiac weakness in diabetic coma. Purdy, however, called attention some time ago to the presence of high arterial tension in diabetes.

The latest contribution to the subject of the relation of diabetes to cardiac disease is a paper by J. Mayer, in *Zeitschrift für klinische Medizin*, Bd. 14, Hft. 3. Mayer has, on account of his residence at Carlsbad, exceptional opportunities for studying diabetes in all its phases, and with all its complications. The present paper is based on a study of 380 cases of diabetes, 266 males, and 114 females, 65.26 per cent. being between the ages of 40 and 60 years. Of the 380 cases, 337 were in the first stage of diabetes, and 47 in the second stage; of the latter 26 were under observation during both stages. His cases show that increased cardiac volume, whether from hypertrophy or dilatation, is much more frequent in diabetes than one would suppose from consulting literature, it having been found, without other anatomical lesion, in 82 of the 380 cases, showing that cardiac enlargement in diabetes is not a mere coincidence. There can be but little doubt that this enlargement is due to the chemical irritation of the pathological blood—irritation caused by sugar and urea, by glycæmia and azotæmia.

The fact of the increased amount of urea excreted by diabetics is too well known to require more than mention, as is the fact that the blood of diabetics contains from .65 to .8 per cent. more sugar than normal blood. So also in regard to the injurious action of polyuria, glycosuria, and azoturia on the kidneys. The experiments of Grawitz and O. Israel in regard to the relation between renal disease and cardiac hypertrophy (*Virchow's Archiv*, Bd. 77, S. 315), and Israel's work on the relations between renal disease and secondary dangers of the circulatory system (*Virchow's Archiv*, Bd. 86, S. 299) have an important bearing on the subject discussed by Mayer, as showing that cardiac hypertrophy is caused when there is an excess of waste material in the organism, and which must be excreted. The healthy kidney can meet large demands upon it, but in diseased conditions—sooner or later according to the individual—insufficiency will result, leading

to increased activity of the heart, and then to cardiac hypertrophy.

O. Israel, during his service at the Berlin Charité, found that of the cases that died of diabetes 10 per cent. had cardiac enlargement, without valvular or arterial lesions, or renal disease. Mayer has examined Virchow's necropsy reports (1856-1887), and among the 69 cases with the diagnosis "diabetes mellitus," the heart was enlarged in 9 cases, exclusive of those in which there was enlargement from anatomical cause (vascular, valvular, or renal disease). This gives a percentage of 13, while Mayer's 380 cases show 21.6 per cent. In a number of other cases there was hypertrophy with chronic endoarteritis, while in some cases endoarteritis and hypertrophy were primary. There seems to be no question, or but little, that the arterio-sclerosis, the vascular dilatation, Gull and Sutton's arterio-capillary fibrosis, and Ewald's muscular hypertrophy of the small arteries, seen in renal affections, are the secondary results of cardiac hypertrophy, all being due, directly or remotely, to the pathological chemical composition of the blood. The cardiac lesions in diabetes, fatty metamorphosis, fatty infiltration, brown atrophy, hypertrophy, dilatation, and other anatomical changes seen in diabetes, are referable to the demands made upon the heart by the diabetic blood; and the sooner general nutrition suffers, the sooner urea and sugar formation exceed the individual limit, the sooner is there an attempt at some sort of compensation.

As regards the influence of these facts on the therapeutics of diabetes, it is evident that everything must be forbidden that can injuriously affect the kidneys and heart, since organs whose work is too great are easily affected by disease. The frequency of valvular lesions in nephritic patients, and of renal lesions in diabetes, is well known. In the 66 cases from the Berlin Pathological Institute, Mayer found 30 of renal disease, and its frequent occurrence in diabetes was asserted by Stokvis at the Congress für innere Medizin in 1886. In his 380 observations Mayer observed it in 64, though infrequently in the form of contracted kidney. The heart and kidneys, he says, must be spared by a suitable diet; nitrogenous food must be limited, and he has of late years used milk to a large extent, and can confirm the favorable opinion of Hoffmann on this subject, expressed at the Congress für innere Medizin.

THE DANIEL A. JONES HOSPITAL.

The corner-stone of the Jones memorial wing of the Presbyterian Hospital was laid last week, the present building being far too small for the demands upon it. The Board of Directors accepted the munificent gift of \$100,000 from the estate of Daniel A. Jones and added to it by subscription over \$50,000. The building now in process of construction will, when completed, be the finest west of New York City. The building will be six stories in height, with an imposing front, surmounted by a 150-foot tower, finished in red brick, with terra-cotta and stone trimmings. It will be absolutely fire-proof, with a perfect system of ventilation, and a capacity of 250 patients. Rev. Dr. Barrows delivered an address on "Christian Charities," in which he said that Mr. Daniel A. Jones was a man most deeply touched by human suffering, and had chosen a sublime monument to perpetuate his memory. Dr. Barrows considered it a propitious omen that the rich were obeying the injunction of Him who was the poor man's physician. At the close of this address Miss Ruth Jones, the little grand-daughter of Daniel Jones, stepped forward and deposited beneath the suspended stone a box containing the records of the hospital and other mementoes of the occasion. The massive stone was lowered and adjusted, after which the little girl gave it three raps with a mallet and said: "The corner-stone of the Presbyterian Hospital is now laid." Appropriate speeches followed by Charles L. Hutchinson, Esq., President of the Board of Trade, Dr. Woolsey Stryker of the Fourth Presbyterian Church, Dr. Breed of the Church of the Covenant, Dr. Withrow of the Third Presbyterian Church, and Mr. D. K. Pearsons.

In his address Mr. Hutchinson said: "We are gathered here in the name of the Great Physician to set the stone which shall be as the corner of the temple dedicated to the service of God. What grander temple could Daniel A. Jones build, what loftier monument could he raise to perpetuate his memory? Hard, indeed, it is in this day and generation to heed the Word of the Master: 'Lay not up for yourselves treasures on earth.' The temptations are so many and so great; the world has so much to offer; the heart finds such delight in things temporal. But how much better for themselves, their children, and their fellow-men, if now in their life-time they should begin

to follow the example set by Daniel A. Jones, or the grand example set by one now on the platform, a near and dear friend of his—Mr. D. K. Pearsons. Better far to spend one-half of an ample fortune and leave a heritage of good and generous deeds and a beloved name to your posterity than to die with all the wealth of the Indies. There is much need in Chicago to-day of more devotion to the higher interests of life, to education, philanthropies, and humanities."

It is thought that the building will be completed some time in November.

TYMPANITES AND TYMPANITIS.

The indiscriminate use of these words for meteorism or flatulent distension of the intestines is exceedingly common—so common, in fact, that if usage can justify a continuation and sanction of error in the use of words, it may be assumed that it is proper to commit this error. But there is a limit to the justification of error by usage, and the error mentioned is beyond that limit. Tympanites cannot mean inflammation of the lining membrane of the middle ear; tympanitis can mean nothing else. The termination *itis* of the latter word shows that it means an inflammation. Tympanites is a Latin derivative directly from the Greek, and of the fifth declension. Tympanitis is derived from the Greek root *τύμπαν*, a drum, to which is suffixed *itis*, signifying that a drum (the tympanum) is inflamed. Tympanites signifies a condition of the intestines giving them a drum-like tension and sound. Lexicographers, medical and general have confused the two words, and it is not strange that medical writers have been confused by them. But it is perfectly clear that the words are not synonymous. There is already more than enough confusion of medical terms: Let us at least make correct use of the words whose meaning cannot be mistaken except by inattention.

THE BILL TO PERFECT QUARANTINE.

On July 5 the House Committee on Commerce reported favorably the bill recently passed by the Senate perfecting the quarantine service. It provides punishment for any person trespassing upon any grounds belonging to any quarantine reservation or for any master, pilot or owner of a vessel

entering any port of the United States in violation of the law aiming to prevent the introduction of contagious or infectious diseases into the United States. It also establishes quarantine stations at the following named places: At the mouth of Delaware Bay, near Cape Charles, at the entrance of Chesapeake Bay, at Key West, in San Diego harbor, in San Francisco harbor, and at or near Port Townsend, Puget Sound. The bill appropriates \$542,000 for the construction and maintenance of the above stations and for the maintenance of the gulf quarantine (formerly Ship Island) \$15,000. In its report the committee says it cannot too earnestly urge upon Congress the necessity of making ample provision for this important service. Heretofore it has been the custom to wait until an epidemic became flagrant in this country and then to make an appropriation in spasmodic haste, to be expended by the President in preventing its spread at an enormous cost, when a judicious and timely expenditure of a small sum would have prevented its original introduction.

EDITORIAL NOTES.

THE NEW YORK ACADEMY OF MEDICINE has received nearly \$12,000 in subscriptions to its building fund.

A CLINICAL SCHOOL AT DETROIT.—The matter of establishing a clinical school in Detroit as a department of the University of Michigan, which has long agitated the people of the State, has finally taken definite form and will doubtless soon be realized. The new movement is to raise \$200,000, to be placed in the hands of the regents to be used for the establishment of such a clinical department. Moses W. Field promises \$20,000, Gen. Alger \$10,000, and six others amounts swelling the total to \$60,000 already.

THE COMMEMORATIVE MEDALS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS subscribed for by foreign members have been forwarded to them through the State Department.

We learn from Dr. J. M. Toner, Washington, D. C., who has charge of the medals, that up to this time only about one-half of the medals subscribed for by home members have been applied for. He would be pleased if those that have paid for their medal would direct him how and where to deliver it. A paragraph to this effect was published in THE JOURNAL more than six months ago.

SOCIETY PROCEEDINGS.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, April 20, 1888.

THE PRESIDENT, HENRY T. BYFORD, M.D.,
IN THE CHAIR.

THE PRESIDENT exhibited a

UTERUS REMOVED PER VAGINAM FOR FIBROIDS.

It was about double the normal size. The fibroids had produced incurable stenosis, and were accompanied by almost constant pain of increasing severity. The patient was 42 years old, and has had four children, the youngest 20 years old. She is obliged to wash for a living, has been getting worse for two years, and during the past year has had to stop work every two or three days on account of suffering referred to the pelvis. She has been under treatment by prominent gynecologists, both for the stenosis and for the fibroid tumors, without avail. As nothing short of a severe cutting operation would have relieved the stenosis, it was thought that vaginal hysterectomy would be but little less dangerous, and would give permanent and complete relief instead of temporary and partial. It would remove the tumors with but little danger and thus forestall a possible abdominal hysterectomy or supra-vaginal amputation with the terrors so often connected with them. The whole uterus was enlarged and hardened and the cervix would form a bad stump in case of such amputation. Two of the tumors were near the serous surface, and one just under the mucous membrane. The stenosis extended half an inch above and a little below the internal os, and is of cicatricial hardness. The tumors were each about the size of a hickory nut. The patient did not have a bad symptom after the operation. The ovaries were not removed, as they were not diseased and were undergoing senile atrophy.

DR. J. H. ETHERIDGE reported a

CASE OF CÆSAREAN SECTION.

The operation was performed on February 21st. The whole pelvis was blocked up by a fluctuating tumor containing a hard substance. The index finger could pass up between the symphysis pubis and the tumor, which seemed to be in the posterior part of the pelvis. I could pass one finger easily, but I could not get two in, and with the utmost pressure of my hand upwards I could not reach the cervix. The patient was a young Irishwoman, 32 years of age, of a nervous temperament, and had borne three children. The first labor was normal. The second labor was terminated by instrumental delivery with some difficulty, and the third one, two and a half years

ago, was accomplished with the greatest difficulty with forceps. There was an obstruction to delivery found at that time, but what it was was not determined. I could not determine what the fluctuating tumor was, and the idea of puncturing it occurred to me upon my first examination, but fearing that I would open a pus cavity that would discharge its contents during the lying-in period, I was deterred from doing it. The patient was taken to the Presbyterian Hospital. The attending physician went with her in a carriage and administered chloroform *in transitu*. About half-past four she was etherized and the initial incision made from above the umbilicus, perhaps an inch and a half, down to the probable location of the reflexion of the peritoneum upon the uterus. The abdomen was very large, and in making the first incision the edge of the scalpel went through the abdominal wall and into the uterus itself. I supposed I was making a cutaneous incision, but the wall was so thin that the knife went through into the uterus. The steps of the operation after that were very simple. The incision was enlarged to about six inches, perhaps seven. The amniotic sac was not broken, and two or three sweeps of the knife carried it through the uterine wall and into the bag of waters, and there was a tremendous welling up, the water flowing out over the patient, the table, and everything else. Dr. Parkes was my vis-à-vis, and he immediately pressed the uterus laterally with the view of forcing the child up through the opening, and it came up breach first. There was no attempt of the uterus to contract. The child was easily taken out in a second of time, and two snap forceps put upon the cord, which was divided and the child given to the nurse. There was very copious hæmorrhage, though not alarming; the walls on both sides seemed to be springs of blood. The contraction of the uterus was secured by the pressure over both sides, no attempt being made to turn the uterus out of the cavity. The placenta was easily secured; the peeling off of the whole of it from the inside of the uterus was speedily and easily and cleanly accomplished. Uterine contractions failed to follow immediately. A hypodermic injection of ergot was given and snap forceps put on bleeding vessels until the hæmorrhage was controlled. The uterus was manipulated and pinched and every effort made to invite nature to set up contraction, which, after a space of seven or eight minutes, came on, feebly, not vigorously.

After the uterus was thoroughly emptied, I passed my hand down into the cervix to see if it was patulous, and I found all four of my fingers could go through easily up to the second joint, showing that there would be an outlet for the lochial flow. The appearance of blood at the vulva indicated that drainage from the uterus would be all that could be desired.

The closure of the uterus was accomplished by three rows of sutures; the first one, which brought together the mucous membrane, was made with a carbolized silk ligature. A larger ligature was used for the muscularis. A fine silk suture was used for the peritoneal covering of the uterus. In the mean time the uterus was contracting very steadily indeed, and the hæmorrhage was well under control, so that by the time the muscular wall was brought together it was a dry wound. The abdominal wall was closed in the ordinary way with interrupted sutures and the patient was put to bed with stimulants and hot applications, and she reacted very well indeed. She ran along for twenty-four hours very well without any particular rise of temperature, but in the second twenty-four hours there was a gradual coming up of the temperature and peritonitis set in. I wished to take advantage of cathartics and get her bowels open, but every effort that was made to physic her, in the second twenty-four hours, was entirely futile. Injections by the rectum were attempted, but the pressure upon the rectum prevented the introduction beyond the sphincter ani of a rectal tube; in the meantime the temperature was going up and the patient getting weaker. Then it was decided to open the fluctuating tumor in the pelvis and see what it was. The patient was chloroformed and placed in the extreme lithotomy position. The posterior vaginal wall was found to be extremely blue. The Cesarean section was performed about four o'clock in the afternoon, and this operation was done near the close of the third twenty-four hours afterwards, viz., about two o'clock. An incision was made in this bulging mass and the pus welled out in great quantities, amounting to about half-a-gallon. Upon introducing the index finger into the abscess cavity, a dermoid cyst was detected, the hair being easily detectable. The patient was put to bed after a thorough evacuation of the pus, but she never rallied from the shock of the operation and died in twelve hours.

It occurred to me, on first examining her, that this could not be an accumulation of ascitic fluid and that it must be pus. From the history of the case and the deduction that was speedily made, the decision was reached that abdominal section should be made and the child removed in that way, because in the examination one could feel up in the vagina, with the finger, a hard mass of something below the promontory of the sacrum that appeared to me would render it impossible to introduce forceps and to drag the child through; and if it was filled with pus, I was certain the woman would die of infection.

DR. W. W. JAGGARD read a paper entitled
A CASE OF CONSERVATIVE CÆSAREAN SECTION
UNDER THE RELATIVE INDICATION, WITH
TERMINATION IN RECOVERY.

Case.—Mrs. E. S., 36 years old, born in Rhenish

Prussia, married in the United States shortly after immigration. She had been a sickly child, unable to walk until her 7th year, on account of *Doppelglieder*, i.e., rachitis. During infancy, she suffered from tuberculosis of the cervical glands, two depressed cicatrices being visible on the left side of the neck at the time of examination. Since her 7th year, she has enjoyed robust health.

First pregnancy: patient's first child was delivered May 13, 1882. Shoulder presentation, right scapula anterior position. Difficult delivery by version, decapitation, and extraction. Puerperium normal.

Second pregnancy, delivery June 20, 1883. Same presentation and position as in first pregnancy. Prolapsus of funis. Delivery by version, extraction, and forceps to the after-coming head. Septicæmia, puerperium six weeks.

Third pregnancy, induction of premature labor at the end of the seventh lunar month. Same presentation and position as before. Delivery by version and extraction. Child survived the difficult operation a few hours. Puerperium normal.

Fifth pregnancy, beginning of last menstruation June 1, 1887. *Status præsens*: The patient of strong frame, and well-developed muscles, is four feet seven inches in height, and 135 pounds in weight. Pregnant; near term; distance from ensiform cartilage to pubis 45 cm. ($17\frac{1}{2}$ inches); from ensiform cartilage to umbilicus, 22 cm. ($8\frac{3}{4}$ inches); circumference around umbilicus, 87 cm. (34 inches). Shoulder presentation, right scapula anterior position.

Pelvic Measurements.

Distance between anterior-superior spinous processes,	27 cm. ($10\frac{1}{2}$ in.)
Distance between iliac crests	27 cm. ($10\frac{1}{2}$ in.)
External conjugate diameter (Baudelocque), - -	14 cm. ($5\frac{1}{2}$ in.)
Distance from sacro-coccygeal joint to sub-pubic ligament (A. G. E. Briesky), -	9 cm. ($3\frac{1}{2}$ in.)
Distance between the great trochanters, - - -	30 cm. (11.7 in.)
Pelvic circumference (Kiwisch)	85 cm. ($33\frac{1}{4}$ in.)
Diagonal conjugate diameter	7.5 cm. (2.9 in.)
True conjugate diameter (estimated), - - -	5.5 cm. (2.14 in.)

Diagnosis.—Simple, flat rachitic pelvis, with so-called absolute contraction of the true conjugate diameter. Apart from the pelvis, the osseous system showed no marked signs of rachitis. There was no abnormal spinal curvature, antero-posterior or lateral, and the long bones were perfectly straight.

Indication for Operation.—Notwithstanding the fact that the pelvis was a typical example of the so-called absolutely contracted simple, flat, rachitic class, the history of former deliveries demonstrated plainly that the obstacle to the

escape of the child through the natural passages was only relative, and not at all insurmountable. Both parents were undersized, with relatively small heads, and the children were of a size less than is common. Moreover, the after-coming head was invariably made to present, and the accommodation of the passenger to the passages was thus greatly facilitated. The case was clearly one in which the woman could be delivered with safety, in all probability, by version, extraction, and craniotomy. On the other hand, the child was living, and Cæsarean section offered the possibility of saving both mother and child, although, of course, with enormously increased material risk. The question of the induction of premature labor, so late in pregnancy, was not considered for obvious reasons. In a word, the relative indication for Cæsarean section was presented.

A plain, unvarnished statement of all the facts in the case was made to the patient. After a week's deliberation, she elected the Cæsarean operation. In reaching this conclusion, she was assisted by the Roman Catholic priest of the parish, who remarked that the pregnant woman was the aggressor; that she had made the contract of maternity; the child was passive, and had made no contract. In strict equity, entirely apart from ecclesiastical considerations, the child's claim to life should be considered at least equally with those of the mother.

Operation.—The patient at once entered Mercy Hospital. The urine was examined, and found to be normal. The only preparatory treatment consisted in a daily bath, in tepid water, with the liberal use of soap, that the woman's mode of life before admission rendered necessary.

In the selection of the time for operation, I had determined to choose the latest possible moment before labor actually began. From the usual data—date of last menstruation, size and position of the uterus, abdominal measurements, length of the child measured by calipers (Althfeld), estimate of the size and weight of the child by palpation (Carl Braun)—it was possible in this case to make only a probable diagnosis of the time of gestation. I concluded that the woman was in the last fortnight of pregnancy.

Early Tuesday morning, March 6, 1888, the patient informed me that she would certainly fall in labor within the next twenty-four hours. She based her prediction upon dull pain referable to the lumbar and sacral regions, and beginning painful uterine contractions. She had been enabled to foretell her other confinements by similar sensations, and I was inclined to attach considerable importance in this case to subjective signs. The only objective symptom indicative of impending labor was a slight increase in the force and frequency of the intermittent uterine contractions. All precautions were taken with respect

to the most thorough cleanliness and disinfection of the operator, assistants, patient, instruments, and environment. The woman was in excellent condition; cheerful; pulse and temperature normal.

The steps in the operation were: After evacuation of the bladder, incision through the linea alba, from the navel to a short distance above the pubes, as low down as was safe, on account of the bladder. The diastasis of the recti muscles was well marked, and the peritoneum was incised without dividing much muscular tissue. No omentum nor intestines presented between the uterus and anterior abdominal wall.

The median line of the uterus coincided with the incision, and the usual manipulation to correct lateral version and axial rotation was unnecessary. Before making the uterine incision, Dr. Holmes placed one hand on either side of the cut, and rendered the abdominal parietes tense enough to prevent the access of fluid to the peritoneal cavity. I incised the anterior uterine wall in the median line at a point a short distance above the os internum with a scalpel, and rapidly enlarged the cut in the direction of the fundus, to the extent of 13 cm. (5 inches) with a blunt-pointed bistoury. The thickness of the uterine wall was about 1 cm.

The placenta was implanted over the line of incision, and the first gush of blood was frightful. The after-birth was quickly separated by the hand, the amnion ruptured, the child caught by the feet, turned, and delivered without laceration of the wound. The child uttered a lusty cry upon its liberation from the cavum uteri. I had requested an assistant to insert his index fingers into the upper and lower angles of the uterine incision, and bring them up close to the abdominal cut as an additional precaution against the escape of fluid into the peritoneal cavity. In the hurry of the operation, this request was forgotten. After, or, rather during the evacuation of the uterus, Dr. Holmes pressed this organ through the abdominal incision, by his hands applied on either side, while Dr. Riese brought the edges of the abdominal cut together behind the uterus, and effectually prevented all intestinal protrusion. The lower uterine segment, after this eventration, was firmly compressed by Dr. Holmes with the thumbs and index fingers of both hands, while the corpus uteri was enveloped in hot sterilized gauze compresses. Squibb's aqueous extract of ergot was exhibited hypodermically after the evacuation of the cavum uteri.

Hæmorrhage was trifling after the contraction and retraction of the uterine musculature, following the escape of the fœtus and envelopes, and was now fully controlled by digital compression. The elastic ligature was not used in the operation.

Twenty-one deep uterine sutures were inserted, including all the tissues down to the mucosa.

For the introduction of these sutures, I used the long slender laparotomy needle of Thomas Keith. This needle passes with remarkable ease through the thick uterine wall, making a very small puncture, that is completely filled up with the suture material—in this case silk. After passing a finger through the canal of the cervix from above downward, the uterine cavity was irrigated with a 5 per cent. solution of carbolic acid, a bacillum containing 90 grains of iodoform placed within, and the wound closed. Union of the peritoneum over the line of incision was effected by a continuous silk suture. When the two rows of sutures had been drawn taut, the uterine wound was accurately closed, and perfectly dry. The uterus, in a state of normal retraction, was returned to the cavity of the abdomen. The toilet of the peritoneum was brief, as no fluid had escaped into the abdominal cavity, and the intestines had not at any time protruded. The abdominal incision was closed with interrupted silk sutures.

The duration of the operation was about one and one-quarter hours. From the extraordinarily simple *technique*, it would seem that the operation had been needlessly prolonged. But the uterine sutures were inserted deliberately and with care; then, too, time was occupied in securing uterine retraction by the application of hot compresses. The total amount of blood lost was not great—scarcely more than the average loss in normal labors. The chief element of danger lay in the suddenness of the loss, but no indication arose for the employment of transfusion, the apparatus for which was in readiness.

The shock from the operation was profound, but brief. The patient fully reacted within three hours. Her convalescence was uninterrupted.

Examination, April 20th, revealed the uterus nearly normal in size in mobile anteflexion. The parametrium was free from any sign of infiltration, and no trace of the sutures in the anterior wall of the uterus can be felt upon careful bimanual exploration. The vaginal finger easily outlines the anterior aspect of the uterus. The uterus is situated relatively high up in the pelvic cavity, but can be readily made to descend below the place of the inlet by gentle pressure above the pubes. I suspect the presence of adhesions—they must be very slight, however—between the fundus and the anterior abdominal wall.

The child was a small, but perfectly formed, and apparently mature male; weight 3000 grams, length 49 cm. The infant thrived on artificial feeding until the sixteenth day, when, after exposure to cold, it died suddenly in a convulsion. The autopsy disclosed intense pulmonary congestion. Although the child was apparently well-nourished, it is not improbable that inanition was a predisposing factor.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Diphtheria by Balsamics—Diphtheria and Sepsis of the New-born—Bloomingdale Asylum to be removed.

The fourth annual meeting of the Fifth District Branch of the New York State Medical Association, which was held in Brooklyn, in the latter part of May, was a very successful and attractive one. Dr. Edwin Barnes, of Dutchess county, presided with dignity and grace, and his annual address was listened to with much interest. In its introductory portion he spoke of the prosperity and the work, past and future, of the Branch, and of the over-crowding of the profession and its prevention; after which he took up the subject of diphtheria and its treatment.

Just now, he said, the treatment by balsamics, such as turpentine, benzoic acid, cubebs, etc., seemed to be again coming into favor, and it was of this method that he wished to speak particularly; presenting the results of his own experience with it in three distinct epidemics, as well as in the isolated cases which, like every general practitioner, he had, from time to time, met with. He then went on to give a résumé of 141 cases of undoubted diphtheria; every one of them being characterized the false membrane in the throat, the enlarged cervical glands, the asthenic fever, and fetor of the breath peculiar to the disease. All cases of simple membranous angina, follicular tonsillitis, or herpetic sore throat, he said, were rigidly excluded; but if, as was claimed by a very high authority, many of these were mild cases of true diphtheria, the total number of cases observed would be greatly increased, and the showing made for the treatment adopted far more favorable than approved in the results of these 141 cases.

The first of the epidemics referred to, commenced in the town of Hyde Park, Dutchess county, in the month of August, 1875, and from Hyde Park it spread into the adjoining towns of Clinton and Rhinebeck. The disease declined in the spring of 1876, but broke out afresh in the autumn of that year, subsiding again in the following spring. In the autumn of 1877, it re-appeared with unusual intensity, and after that gradually disappeared. The first patient that he treated in the epidemic of 1875, was an extremely self-willed and impulsive young lady who declined to take the classic mixture of tincture of chloride of iron and chloride of potassium, or to permit him to apply a spray to her throat. Without much confidence in its efficacy he then prescribed fluid extract of cubebs in syrup of tolu; but upon his next visit he was more than pleased with the change for the better that had taken place. The

throat had lost its dusky hue, the membrane was separating at the edges; the breath had lost much of its fœtor, and the pulse, as diminished in frequency, with increasing strength. She progressed rapidly to convalescence, and since that time Dr. Barnes said he had relied upon cubebs as the sheet anchor in his treatment of diphtheria.

Of the 141 cases cited, seventy-six were males and sixty-five females. The youngest was 6 months of age, and the oldest 33 years. Twelve were fatal, and in three of these the cases were far advanced and almost hopeless before the treatment was instituted. These three patients were all children in one family, and, the attending physician having himself contracted the disease, they were left without care and without medicine for three days; the parents being entirely destitute. In another case that resulted fatally, the diphtheria trouble was complicated with whooping-cough, and the patient died from hæmorrhage, brought on by the paroxysms of coughing. Three other children, aged respectively 2½, 4 and 5 years, had syphilitic ozæna, which he regards as the most hopeless of complications, and no treatment proved of any avail when the disease had reached the nares.

In five of the fatal cases borax, lime-water, permanganate of potassium, sulphate of lime, and finally, persulphate of iron were perseveringly employed locally by means of the steam atomizer. In all of the fatal cases, death was by asthenia; none of the patients were asphyxiated, and he had never seen the disease inside the larynx when cubebs were given from the outset. The following was the treatment, which became almost a matter of routine, adopted by Dr. Barnes:

The patient was at once put to bed and kept there, and the following prescription ordered:

R Extract cubeb, fluid, - - - 5 iss
Syrup toluatan. - - - q. s. ad. f 3 iv
S. A teaspoonful every three hours.

This was alternated with a teaspoonful of a mixture, also given every three hours, consisting of a solution of three drams of citrate of iron and quinine in two ounces of water, with two ounces of syrup of tolu. These doses were for a child from 5 to 8 years. Stimulants were at first given freely in every case, but afterward only when the powers of life were evidently failing. An important part of the treatment was the use of as much nourishment as the patient could possibly be made to take. In one fatal case an immense blood-blister lined the fauces and was constantly swayed backward and forward with the movements of inspiration. The worst cases were those in which the membranes were of a dirty grayish or green color and sometimes almost black. The next worst form of membranes was that of a peculiar smooth, dead-white appearance, resembling a wax cast. Nearly all the fatal cases, as well as fully one-half of them which recovered, had diphtheritic coryza with the

characteristic discharge, at first thin and ichorous, excoriating the lip, and then sanious and accompanied with epistaxis. In one case, that of Dr. Barnes' own little daughter, after the membrane had disappeared from the throat, the disease crept upward from the nares, through the nasal duct and lachrymal sac, and extended to the palpebral conjunctiva. Her recovery, though slow, was complete.

Dr. Barnes went on to say that he did not wish to represent cubebs as a specific in diphtheria, but simply to show that in his experience it had stood the test of three successive epidemics of the disease, and always given excellent results. Much depended, he thought, on the mode of administration. Trousseau, Trélat and Robinson contended that the remedy should be given in powder; but the dose of powdered cubebs was so large that in the majority of cases it was very difficult to give, while in many it was entirely impossible, as the fine particles of powder would lodge in the throat and give rise to irritation and cough. It was also of the greatest importance that the drug should be pure and fresh, and he had little confidence in any fluid extract more than three months old. When a thoroughly good article was used, its effects were sometimes marvelous; the membrane being thrown off in from twenty-four to forty-eight hours, having a healthy granulating surface or a secondary membrane much less formidable in appearance than the first. In addition, the breath lost much of its fetor, deglutition became more easy, and convalescence was soon established.

At the commencement of the epidemic he used the atomizer faithfully, running through almost the entire range of local applications recommended in diphtheria; but as the cases multiplied, it became impossible to carry out local treatment in many, and he found that patients living at a distance in whom this was not attempted did quite as well (if not better), as the others. This led him gradually to discontinue local treatment entirely, and a simple gargle of lemon-juice and water was generally all that was required in this direction. He regarded the inhalation of strong solutions as unadvisable, on account of the danger of their entering the larynx, trachea and bronchi, and thus doing an amount of harm that would counterbalance any good done by their application to the fauces. Again, the use of the probang was very apt to nauseate children, and if they were young and timid they would expend an amount of strength in struggling against such applications, which they could ill afford to lose. The membrane was not the disease itself, and it could only kill by acting mechanically, just as any other foreign substance would if present in sufficient quantity in the air-passages. It was an excreted substance, which had done its worst when its elements were in general circulation, and it was

powerless for further mischief, except as an obstruction. It would, of course, be best, he continued, to remove a mass of putrefying membrane that was blocking up the larynx and poisoning the breath if it could be taken away without disturbing the patient too much; but, as a rule, any measure that exhausted him was to be carefully avoided.

At the same session Dr. J. Lewis Smith presented a paper on "Diphtheria of the New-born and Sepsis of the New-born as observed in the New York Infant Asylum and New York Foundling Asylum," a portion of which he had already read before the Section on Pædiatrics of the Academy of Medicine. In the cases of five of the new-born which had come under his observation he stated that the infection usually entered the system through the umbilicus, and was usually microbic in character. There were, however, three classes of cases. The first were those in which an umbilical phlegmon had resulted from the umbilical ulceration, constituting the affection often designated as erysipelas by the older writers. In two such cases at the New York Infant Asylum diphtheritic deposits were also present. Both of these cases terminated fatally, but some of the others recovered. In this group of cases the infection was transmitted mainly through the lymphatics. The second class included those in which the poison was transmitted through the umbilical vessels, especially the vein, and the third class those which were infected by channels other than the umbilicus, such as the lungs, the skin, etc.

It had been observed by Trousseau, he said, that infantile erysipelas was most frequently seen in hospital wards in which puerperal fever was present, and in such cases as these would no doubt now be recognized as due to sepsis. Of five cases of diphtheria in new-born infants only one recovered, while more of the mothers had the disease.

In the course of the paper Dr. Smith referred to an epidemic which occurred in the New York Infant Asylum, and which seemed to be due to the poisonous atmosphere of the lying-in-wards of the hospital. An examination of the air by Drs. Prudden and Cheeseman revealed the presence of multitudes of disease germs, and it was a significant fact that even, after the wards had been thoroughly fumigated with sulphure (twice the quantity of sulphur recommended by the New York Board of Health, being employed for this purpose), numerous disease germs, could still be found and cultivated. The best plan of disinfecting such rooms and hospital wards, Dr. Smith believed to be by simply washing the floor, ceiling, furniture, etc., with solution of bichloride of mercury, and he also thought that during the progress of a case of diphtheria or other contagious diseases it was of service to keep a solution of car-

bolic acid and other disinfectants constantly boiling, or at least simmering, in the sick-chamber. When such a plan was adopted the physicians and others in attendance were less likely to convey the contagion to others in their clothes than if no such precaution was adopted.

Dr. Smith having stated, in reply to a question from Dr. E. H. Squibb, that no water was employed at the time that the sulphur fumigation of the hospital wards was made, Dr. Squibb said that in using sulphur for this purpose the presence of moisture was always regarded as essential. It was sometimes advised that the walls and floor should be washed and left wet, but he thought it was much better that water should be kept boiling in the room at the same time that the sulphur was being burned. In this way a more complete oxidation of the sulphurous acid could be secured, and it was only in the nascent state that this, like the chlorine group and other similar agents, become effective as antiseptics.

At the afternoon session an interesting discussion on "Surgical Aid in the Treatment of Pulmonary Disease," took place.

It has been decided to remove the Bloomingdale Asylum (the insane department of the New York Hospital) to the vicinity of White Plains, Westchester County, where the Hospital Society owns a suitable tract of land. Streets will be cut through the Bloomingdale property, and the greater part of it will be sold in city lots, thus throwing open one of the finest districts for private residences on Manhattan Island; but the John C. Green memorial hall, the finest of the asylum buildings, will be allowed to remain, and will be converted into a general emergency hospital.

P. B. P.

LETTER FROM BOSTON.

(FROM OUR OWN CORRESPONDENT.)

The Massachusetts Medical Society: One Hundred and Seventh Anniversary.

(Concluded from Vol. X, p. 816.)

Membership in the Society—Physical Education in the Schools—Postural Treatment of Constipation—Surgery of Malignant Growths—Sublimate as a Disinfectant—The Annual Discourse.

Second Day—Wednesday, June 13.—President Gage opened this, the annual meeting, and the report of the proceedings of the last annual meeting was read. The Society now numbers 1,690 members. During the year 82 new members were admitted and 33 old members died. The finances of the Society were shown to be in a satisfactory condition.

The Society took an important step in concurring with the action of the Councillors in the repealing of a joint resolution, which has hitherto prevented even the presentation for examination

for admission to the Society of any person not a graduate of certain medical schools approved and recognized by the Society. Under the change, therapeutics is left out of consideration, and a graduate of any reputable school is at liberty to present himself to the Censors to show what he knows if he has renounced the doctrines disapproved by the Society.

An interesting report was submitted from the special committee appointed at the last annual meeting to investigate the subject of "Physical Education in the Schools." This was read by Dr. C. F. Withington. After showing what has been done by certain other cities in this direction, as well as how little has been done in Massachusetts, the report said that the matter of instruction in physical culture is one of great importance, and this will require the employment of persons who are qualified by study and experience to adapt the work to the needs of the pupils. There is no reason why the regular teachers in the schools cannot, after being instructed in the principles and practice of the science, carry on the work of their own classes under the oversight of a general supervisor of physical culture, in much the same way that some of the teaching of music in our schools is now carried on. This will make the expense of the movement, after the first, comparatively light. The report was adopted, and it was voted to send a copy to the State Board of Education.

Dr. E. T. Williams, of Roxbury, read a paper on "Postural Treatment of Constipation." The writer thought that constipation was frequently aggravated, if not caused, by a faulty and unnatural position at stool. Similar to labor, the act of defecation is chiefly the result of the action of the diaphragm and of the abdominal muscles. Contrast the action of the bowels of a man seated on a comfortable seat with his newspaper and cigar, and of a man in the woods away from all such conveniences. Compare the attitude of all animals in the act of defecation. The stooping position is correct. No seat at all would be best for men, and for women the use of the chamber would be good.

Dr. M. H. Richardson read a paper on "The Surgical Treatment of Malignant Growths," which he had very carefully prepared from a great many statistics. The earlier an operation is performed the safer it is, and then the operation should be most free for thorough removal. It is generally admitted that malignancy is local and not general. Lack of success is due to (a), insufficient excision of the growth; and (b), insufficient attention to the glands, lymphatics, etc. Enlarged glands generally contraindicate an operation, yet even then we may sometimes operate. The order of fatality is for operation for, 1, lymphosarcoma; 2, melanotic sarcoma; 3, sarcoma of tongue and tumors of; 4, testicle; 5, breast; 6, face; 7, hip;

8, neck; 9, jaw; 10, penis; and 11, extremities.

Dr. W. B. Hills, of Cambridge, read a paper on "The Value of Corrosive Sublimate as a practical Disinfectant." The author said that disinfection is now based on the presence of microorganisms, and hence disinfectants are only those substances which will destroy the vitality of the microorganisms. The hypochlorites are efficient on account of their oxidizing power, and this destroys other organic substances as well as the germs. Previous to 1880 corrosive sublimate had not been shown experimentally to possess the power. Koch says 1:5,000 aqueous solution will kill almost all germs, and 1:10,000 will destroy all of them. 1:1,000,000 restrains partially the growth of spores of the anthrax bacillus, and 1:300,000 absolutely restrains them. Corrosive sublimate is now at the head of the list of the disinfectants recommended by the Committee on Public Health. Its power, however, varies with the substances acted upon, being greatest for aqueous solutions and least for albuminous, since there is found an insoluble albuminate of mercury. It is true that some of the germs must be confined between the particles of this, but they are not destroyed and may become free again. Hence, for disinfection, corrosive sublimate must be used in excess, *i. e.*, allowance must be made for the chemical change. It is, moreover, destructive to lead pipes, and hence should not be disposed of through them. It may be used to wash woodwork, furniture, etc., and clothes not stained with excreta (which are albuminous), but it is absurd to use it for large quantities, *e. g.*, vaults, cesspools, etc. The excreta should be disinfected before going into the vaults. The dangers of poisoning are very slight; for the solutions are so dilute and the taste is bad. It is, however, risky if not dangerous to use so much in sprinkling the streets, which may rise again as dust.

In reply Dr. S. H. Durgin, Chairman of the Boston City Board of Health, said that only a light sprinkling of a dilute solution is used in the streets, and an hour or so later this is swept up and carried away. Hence it cannot get soaked into the ground, and the subsequent dangers are very slight, if they exist at all.

Delegates were then introduced from neighboring States, and at 12 o'clock, according to the usual custom, the hall doors were locked, and the *Annual Discourse* was given by Dr. B. Joy Jeffries, of Boston, who in brief said that: It is very generally agreed that the lawyer, the minister, the squire and the physician do not hold the same relation to the community as they formerly did. As that position was one of trust and confidence, we should study the causes that have broken it down, and correct it if possible. If the community judge the whole from a part, it is the duty of those faithfully striving not to have their labors misjudged and injured. For this there are many causes:

Formerly there was less diffusion of knowledge, and so, too, less diffusion of falsehood.

When the physician possessed more knowledge, more education than those about him, he was respected for these as he should have been; but now many have outstripped him, and the doctor finds his level given by his education and refinement. Good breeding and good education are not now, as formerly, the natural attributes of those legalized by a diploma. The public recognize that medicine is largely entered into as a trade or a business, and that many of its members hold degrees and diplomas purchased of the mills, legalized, it is true; but so are the dram-shop and the saloon legalized. But law is not justice. Medicine can only recover its former just position when the world is forced, by its existence, to recognize that to be a graduate of a good medical school means to have the education of our best universities in addition. The physician must be, can be and will be a man of science. As such, we can ally ourselves with the great body of men striving for knowledge and seeking truth. From the lack of this, a large part of our profession is not distinguishable from the man of business or trade.

Are we not bound in honor to do all in our power to bring up the standard of education and the standard of professional requirements in our calling? It would be a good thing for the world and our profession if nine-tenths of the medical colleges were swept away, and what was good in them gathered into a few great medical universities; placed where teaching and study could best be carried out. Must we recognize an uneducated man merely because he has a diploma? Shall we simply avail ourselves for gain of the laity's ignorance of the subjects we are familiar with, their passions, prejudices, superstitions and unfathomable credulity? There is no limit to human credulity in medicine, and hence it is easy to fool them, and hence is the secret of the success of quacks. Although legal to take this advantage, it is not justice.

We know all about the quack and pretender, licensed or unlicensed, and we simply assist in cheating the community, become *particeps criminis*, by in any way *seeming* even to recognize him professionally or socially. Next to honesty, true moral courage pays the best in the world in the long run. The tendency to compromise is dangerous, especially in this community.

The question of our social position is a delicate one. Our professional calling *should* render us the social equals of any. It has to contend with rank and title and office, and it speaks well for our calling that it has wrung even toleration from them. This it has done only by showing superiority in scientific attainment and hard work, in seeking and accumulating knowledge, which is power. Cultivation means refinement.

Our profession cannot contend with what is called business in the accumulation of wealth. Even with continued health and strength, and the largest possible amount of practice, a physician in this country can never acquire, by his toil exclusively, the incomes readily made in other occupations now recognized as professions. Our calling is most essentially not a trade, but belongs to that department of man's work known as scientific or knowledge-seeking. Now, the world over, men who give themselves up to the pursuit of knowledge have been considered as worthy of only so much of this world's goods as will simply keep them bodily in a condition to work with their brains and hands in science-seeking.

Never before have there been so many men so highly educated in medicine as now. I cite as proof the papers and discussions at our society meetings, the articles published in our journals, and the respect our best men are gaining from the thorough medical scholars and lecturers of England and the Continent. Never before have we had such competent and thoroughly taught practitioners under 30 years of age. Never before have we had so much true scientific work going on in our profession. Should these men be classed with the ill-bred and half-educated graduates of the remaining nine-tenths of the medical schools of this country? Yet this is precisely the way they are at present treated and regarded by the laity, who make no distinction between one physician and another. And this by all classes of the laity, high and low, rich and poor, learned and unlearned.

The elevation of the profession has been helped by the Massachusetts Medical Society by raising its standard of requirement. But are the best schools even yet doing *all* that is needed? The success and the growing number of the polyclinics and post-graduate courses seem to prove that the student and the graduate find that there is something more to be learned.

The more a man knows outside of his profession the better physician he will be. We learn to guide and govern men and women. The idea is erroneous that the physician cannot do anything else. But there is no place in medicine for the Bohemian or the dude. As dependency is the mother of invention, so it is the father of success. Only in the elevation of the standard of our profession can our calling be replaced in the respect of the laity, at the same time completely separating us in their judgment from the bands of quacks, trade doctors, *et id omne genus*.

A unanimous vote was passed by the Society giving thanks to Dr. Jeffries for his admirable address.

After the conclusion of the address the members of the Society, of whom over 800 were present, formed a procession in the order of seniority and marched to the Hotel Vendome, where they

were received by Dr. Chas. B. Porter, anniversary chairman, and the President and President-elect of the Society, Gov. Ames, Rev. E. E. Hall, Rev. Phillips Brooks, Dr. Oliver Wendell Holmes, and other distinguished professors of Harvard, and then a buffet lunch completed the festivities of the day and the one hundred and seventh anniversary of the Massachusetts Medical Society. The next annual meeting will be held on the second Wednesday of June, 1889. N.

THE TRANSPLANTING OF A RABBIT'S CORNEA INTO THE HUMAN EYE.

Dear Sir:—I have just read the article published on June 16, on the above operation, and I wonder how it could get into *THE JOURNAL*; for its style is certainly better suited for the columns of a newspaper than a medical journal. And whoever wrote the article seems to know very little of the literature of this keratoplastic operation; if he knew more, he probably would not have been in a hurry to report Dr. Chisolm's case. He would know, 1, that during the past 40 years rabbit's cornea has been implanted into the human cornea so many times that there is nothing new or "wonderful" about it; and, 2, that in most cases, however, the transplanted piece gradually lost its transparency, and the vision of the patient was not permanently improved. But as the operation is done for the purpose of restoring sight, it certainly is ridiculously premature to report an operation as a success a few days after it was done, when it is still undecided whether or not the graft will remain transparent.

If those who imitate Prof. von Hippel's operation would only imitate also his patience and conscientiousness, and wait for the final results of their operations, their reports would be of more scientific value. For ten years Prof. von Hippel had been trying to find a method of preserving the transparency of the transplanted cornea, and at last he succeeded in two cases which he reported last year at the meeting of the German Ophthalmological Society. But to feel warranted in reporting the result as a lasting success, he had been watching the one case twenty-one months and the other case three months after the operation. He did not operate one week before the expected meeting and then hurry there to have the success of this "wonderful" operation heralded all over the country.

There is another thing that the reporter of Dr. Chisolm's case might learn from the German professor, to-wit, modesty and moderation in stating the possibilities of the operation. Hippel himself pronounced the usefulness of his operation in its present form to be very limited, because it was applicable to those cases only in which the opacity (leucoma) covered the cornea so far that

an iridectomy could not improve the sight, but where at the same time the opacity did not extend through the *entire* thickness of the cornea. But, he said, these conditions are very rarely found; and by far the larger majority of cases in which we should like to employ corneal grafting, are *total leucomata*, where the *whole* thickness of the cornea has been transformed into opaque, cicatricial tissue; and besides in most of these cases the iris is adherent to the posterior surface of the leucoma. *In all these cases it is evident the most successful grafting, with perfect preservation of transparency of the transplanted piece, could not restore any sight on account of the posterior layer of opaque corneal tissue (which is not removed by the operation) and the adherent iris.*

Our anonymous writer, however, claims: "Even these restrictions, however, open this great blessing of restored sight to a large (sic!) class of persons heretofore considered hopelessly blind."

The contrast of these views needs no further comment; the one is the calm judgment of a man of experience and sober thought; the other is the result of inconsiderate haste.

Truly yours,

F. C. HOTZ, M.D.

Chicago, July 8, 1888.

MISCELLANEOUS.

A NEW DISINFECTING APPARATUS.—DR. G. VANOVERBECK DE MEYER, Professor of Hygiene in the University of Utrecht, thus describes a new disinfecting oven of his invention:

The oven consists of a metal boiler which is placed in a second, slightly larger metal boiler. The last mentioned is covered, except on its lower surface, with a non-heat-conducting material. The space between the two boilers is filled up to half the height with water. A large round opening is made at the top of the inside boiler, and in the bottom another, but much smaller opening. A metal pipe, bent at right angles, leads from the bottom hole, between the two bottom plates, to the exterior of the outer casing near its bottom. On the top of the outside boiler are pipe-holes, which can be closed by screw plugs, and are used for filling the apparatus with water, insertion of the thermometer, etc. An emptying tap, gauge and cleaning-hole are also, of course, provided. One of the four upright sides of this apparatus is occupied by a door, also with double walls, which swings on stout hinges, and is fastened with thumb-nuts or other similar fastening, a piece of suitable material being placed between the door and sides, so as to make the door tight. If the model apparatus, which (when half-filled) contains about 15 litres of water, is heated by an ordinary small gas-stove, steam will issue from the escape pipe in one hour and fifty-two minutes.

This simple machine has the following advantages: In the first place, the temperature of the inside boiler is so increased that no condensation of the steam can take place, the heat coming from the water itself, from which the steam for the disinfecting has to be generated.

In the second place, by introducing steam at the top of the apparatus and causing it to escape at the bottom, thus driving the steam in a downward direction, the advantage is obtained that the steam spreads itself in layers, and

thus regularly in all parts of the inside boiler, at the same time affording the atmospheric air, which is present in the pores and meshes of the goods to be disinfected, the opportunity to escape in the natural direction (dependent on the difference in specific gravity).

Thirdly, a very slight degree of pressure, equal to a heat of 101° to 102° C., exists in my oven, owing to its peculiar construction (the height of the boiling mass of water and the fixed proportion between the sizes of the openings for the entrance and escape of the steam). The existence and maintenance of this temperature are shown by a thermometer placed in the tube through which the steam escapes.

At my request commissioners were appointed by the various Dutch ministries, the latter having a great interest in obtaining good and, at the same time, cheap disinfecting ovens, and the result of these tests have also, both thermometrically and bacteriologically, always been favorable.—*The Sanitary News*, June 9, 1888.

THE NATIONAL ASSOCIATION OF RAILWAY SURGEONS.—The preliminary meeting of this Association was held at the Palmer House, Chicago, Ill., on June 28, and was called to order by the Chairman of the Committee, Dr. C. B. Stemen, of Ft. Wayne, Ind., at 9:30 A.M., who said the principal object of the meeting was for permanent organization. The further and additional objects of the Association were to bring the surgeons of the different railroads together annually to develop this special and rapidly growing branch of surgery, to report cases, to relate experiences, to exchange views, and to discuss the best means and methods of treatment in railway injuries.

The meeting was very largely attended, nearly all the prominent railway surgeons of the country being in attendance. Sixty-three railroads were represented. The Association starts out with a membership of 600, and promises to be one of the most active surgical associations in the United States.

The Association elected the following officers for 1889:

President—Dr. J. W. Jackson, Kansas City, Mo.

First Vice-President—Dr. J. H. Murphy, St. Paul, Minn.

Second Vice-President—Dr. J. B. Murdock, Pittsburg, Pa.

Third Vice-President—Dr. W. W. Ridenour, Massillon, Ohio.

Fourth Vice-President—Dr. B. L. Hovey, Rochester, N. Y.

Permanent Secretary—Dr. C. B. Stemen, Ft. Wayne, Ind.

Corresponding Secretary—Dr. E. R. Lewis, Kansas City, Mo.

Assistant Secretary—J. H. Trussel, Alliance, Ohio.

Treasurer—Dr. R. Harvey Reed, Mansfield, Ohio.

Next place of meeting St. Louis, Mo.

EDUCATED CORPUSCLES.—"The future of preventive medicine," said Prof. Ray Lankester in the fascinating lecture which he delivered at the London institution, "is the education of the white blood corpuscle." A corpuscle is a minute cell of protoplasm which floats in the human blood. This minute creature eats and lives and flourishes and dies almost like a human being. Its special function, said the lecturer, is to eat up the poisonous element which finds its way into the blood. When a wound heals it is because these indefatigable corpuscles have found their way to the sore and have eaten away the injured part. When bacteria gets into the system the duty of the corpuscles is to go for them and eat them up. If they succeed, the patient recovers. If they are out of appetite, or the bacteria too tough a morsel for them to attack, the patient dies. Sometimes, with unconscious heroism worthy of Marcus Curtius, they purify the bodies in which they live by eating up poisonous particles and then ejecting themselves, thus sacrificing their own lives. But such heroic self-immolation is not necessary if you educate your corpuscle. His education proceeds by inocula-

tion. By accustoming your protoplasmic cell to a low diet of mildly poisonous matter, such as the vaccine lymph, it becomes acclimatized, as it were, and is strong enough to eat up without inconvenience the germs of small-pox, which would otherwise prove fatal. It is these invaluable corpuscles, which enable confirmed arsenic eaters to swallow with impunity a dose sufficient to kill six ordinary men, and Prof. Laukester is of the opinion that they can be trained so as to digest the most virulent poisons and deal with a great number of diseases.—*Pall Mall Gazette*.

HEALTH IN MICHIGAN.—For the month of June, 1888, compared with the preceding month, the reports indicate that cholera morbus and diarrhoea increased, and that pneumonia, influenza, tonsillitis, bronchitis and erysipelas decreased in prevalence.

Compared with the preceding month the temperature in the month of June, 1888, was much higher, the absolute humidity was considerably more, the relative humidity was more, the day ozone was the same, and the night ozone was less.

Compared with the average for the month of June in the nine years, 1879-1887, measles were more prevalent, and intermittent fever, remittent fever, diarrhoea, whooping-cough, tonsillitis, diphtheria and dysentery were less prevalent in June 1888.

For the month of June, 1888, compared with the average of corresponding months in the nine years 1879-1887, the temperature was slightly higher, the absolute humidity was slightly more, the relative humidity was the same, the day and night ozone were less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of June, 1888, at 19 places, scarlet fever at 30 places, typhoid fever at 10 places, measles at 42 places, and small-pox at Detroit.

Reports from all sources show diphtheria reported at 4 places less, scarlet fever at 24 places less, typhoid fever at 4 places less, measles at 22 places less, and small-pox in the same number of places in the month of June, 1888, as in the preceding month.

LEGISLATION REGARDING POULTRY-SELLING.—The State Legislature of Massachusetts has enacted the following: 1. No poultry, except it be alive, shall be sold or exposed for sale until it has been properly dressed by the removal of the crop and entrails, when containing food. 2. Whoever knowingly sells or exposes for sale poultry contrary to the provisions of Sec. 1 of this Act, shall be punished by a fine of not less than five, nor more than fifty dollars for each offense. The Boards of Health in the several cities and towns shall cause the provisions of this Act to be enforced in their respective cities. It would have been better surely to have omitted the words, "when containing" in the first section. The entrails always contain either food or the excrete refuse of it, containing numberless microbes ready to set up putrefactive or diseased processes.—*Prophylactic*.

DEATH OF DR. A. Y. P. GARNETT.—DR. ALEXANDER YELVERTON PEYTON GARNETT, of Washington, ex-President of the American Medical Association, and for many years one of the most prominent members of the Association, died at Atlantic City, N. J., on Wednesday last. His admirable address before the Association at Cincinnati will be long remembered by those that heard it. Dr. Garnett was graduated from the University of Pennsylvania in 1841. His loss will be severely felt, not only in Washington City, but also by the whole profession. A sketch of his life will appear next week.

THE CONGRESS FOR THE STUDY OF TUBERCULOSIS, which meets in Paris on July 25-31, under the presidency of Professor Chauveau, promises to be a grand success. Delegates will attend from numerous French and foreign societies. From America delegates go from the Academy of Medicine of New York.

THE COLLEGE OF PHYSICIANS AND SURGEONS, of New York, will require hereafter examinations for admission. Henceforth the College Year will consist of a period of vacation, and a session of from eight to nine months, from October 1 to about June 15. The number of didactic lectures will not be absolutely increased. The course will be graded, and extend over three years. This, we believe, is largely due to the influence of the late Dr. C. R. Agnew.

DR. I. N. QUIMBY makes a formal, but we may say unnecessary, denial of the charges of a correspondent of the *Medical and Surgical Reporter* that his action on the Nominating Committee at Cincinnati was in obedience to his "being instructed by his delegation." It is scarcely to be supposed that any one believed the charge.

A TRAINING SCHOOL FOR MALE NURSES has been erected on the grounds of Bellevue Hospital by Mr. D. O. Mills, and presented to New York City.

THE WOMAN'S MEDICAL COLLEGE OF PHILADELPHIA will receive by bequest the scientific books and herbarium and dried plants of the late Dr. Rachel Bodley.

PROFESSOR HYRTL has endowed six scholarships in the Vienna School, to go to worthy students without means, without distinction of nationality or creed.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from June 30, 1888, to July 7, 1888.

Col. J. H. Baxter, Chief Medical Purveyor, will proceed to New York City on public business connected with the Medical Department, and on completion thereof will return to his station in Washington City. S. O. 150, A. G. O., June 29, 1888.

Major Edwin Bentley, Surgeon, retired from active service July 3, 1888, by operation of law. S. O. 153, A. G. O., July 3, 1888.

Capt. Richard W. Johnson, Asst. Surgeon, designated as medical officer for a camp of instruction in rifle practice to be established at Fisher's Island, N. Y. (near New London, Conn.), on July 2, 1888, and to continue during the months of July, August and September; and ordered to proceed to Fisher's Island in proper season and report to the commanding officer for duty. S. O. 131, Div. Atlantic, June 28, 1888.

First Lieut. Wm. D. Crosby, Asst. Surgeon, leave of absence extended one month. Par. 8, S. O. 151, A. G. O., June 30, 1888.

First Lieut. Paul Clendenin, Asst. Surgeon, leave of absence granted in S. O. 59, Dept. of Texas, June 4, 1888, extended one month. S. O. 149, A. G. O., June 28, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Two Weeks Ending July 7, 1888.

Surgeon A. M. Moore, ordered to naval station, New London.

P. A. Surgeon A. A. Austin, detached from "Gedney" and wait orders.

Asst. Surgeon Thomas Owens, detached from naval station, New London, and to coast survey Str. "Gedney."

Asst. Surgeon R. P. Crandall, detached from the U. S. S. "Saratoga," and to the U. S. S. "Galena."

Medical Director George Peck, placed on retired list 9th inst.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending June 30, 1888.

Surgeon John Vansant, granted leave of absence for ten days. June 25, 1888.

P. A. Surgeon F. W. Mead, granted leave of absence for thirty days. June 28, 1888.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, JULY 14, 1888.

NO. 2.

ORIGINAL ARTICLES.

THE SURGICAL ADVANTAGES OF THE BURIED ANIMAL SUTURE, AND ITS ADAPTABILITY TO SPECIAL PURPOSES.

*Read in the Section on Surgery, at the Thirty-ninth Annual Meeting
of the American Medical Association, May, 1888.*

BY HENRY O. MARCY, M.D.,
OF BOSTON, MASS.

In the light of modern science old experiences and theories are to be viewed in a new way, and many facts are subject to an interpretation quite other than originally given. This is especially true in surgery in reference to the rôle of the suture. The introduction of antiseptic wound treatment has modified the use of the ligature and suture to a degree which renders possible results hitherto never attained.

A review of the principles of suturing necessarily involves a brief consideration of the ligature. Its application to arrest hæmorrhage seems so natural that it may be accepted as probable that it has been used from the earliest times of the race; certainly it was known to Hippocrates. Although frequent mention is made of the ligature by the earliest writers, it was considered a bold innovation when Ambrose Paré advocated the tying of vessels in amputations, and we can now understand why these teachings were received with so much doubt and later came near being rejected altogether. Even within our own times, it was applied in wounds which generally became septic, while the method of searing which it supplanted, by the very means used to prevent hæmorrhage, prevented, in large measure, septic poisoning.

In our own student days, the classic rule was to leave one end of the ligature of all large vessels long and, no matter how a wound was closed or dressed, this was to extend from the coapted parts. If several, they were supposed to serve a valuable purpose for drainage, and were intended to cause a sloughing of the constricted tissues and come away with them at the end, often, of many days or weeks.

Had Sir Joseph Lister done for the profession and the world no other service, his name should

be handed down the generations for his admirable researches upon the ligation of vessels in amputations and especially in continuity. Others had indeed preceded him in the use of animal ligatures with excellent results, but their true mission could not be observed, except in aseptic wounds. Having excluded the ferments, Mr. Lister demonstrated that repair quickly supervened in a normal way, that the ligature soon underwent cell infiltration and was not thrown off, as formerly supposed necessary, as a foreign body. When his pupil in 1870, I observed that he practiced tying arteries, cutting the ligature short and closing the wound. He published, as early as April, 1869, an article in the *Lancet*, from which I quote:

"Thus the dead but nutritious mass had served as a *mould* for the formation of new tissue, the growing elements of which had *replaced* the materials absorbed, so as to constitute a living solid of the same form. . . . The two pieces of catgut which had been tied around the vessel at the distal part had become, as it were, fused together into a single fleshy band, inseparably blended with the external coat of the artery. The knots were nowhere discernible, and the only indication of the end which had been left long, at the time of the operation, was the presence of a black speck (the original material contained dark mineral impurities) here and there upon a delicate thread of cellular tissue in connection with the vessel. The cardiac ligature was in like manner continuous in structure with the arterial wall. The short ends had disappeared, but the massive knot was represented by a soft, smooth lump which appeared at first homogeneous except that it was speckled with dark particles as above referred to. On section, however, I discovered, in the interior of the mass and lying close to the wall of the artery, a small residual portion of the original knot, of comparatively firm consistence, and with the threefold twisted character of the cord plainly visible. It was quite distinct from the living tissue, so that it could be readily picked out from its bed with a pair of needles. Here almost all the original tissue had been removed, but it had served as a mould for the development of new tissue which had taken its place, and which retained the form of the mould in which it had grown."

He describes the microscopic appearances as follows: "A bit of the residue of the peritoneal thread having been teased out with needles, in a drop of water presented, like a fresh piece of peritoneum, the wavy bundles of parallel fibres characteristic of perfectly developed fibrous tissue. Adhering to the surface of the remnant of the ligature was some soft opaque material, readily washed off with water, consisting of corpuscles of different forms, most of them caudate, or fibro-plastic, but some spherical, though not resembling those of pus; and, here and there, fragments of the original peritoneal tissue, affected more or less with interstitial cell development. At a short distance from the remains of the old thread, the fleshy material which had been formed at its expense proved to be a most beautiful example of fibro-plastic structure, the coarse fibres which mainly constituted it being composed of very large elongated cells, often containing several nuclei and presenting in their course branchings and thickenings of various forms. Here and there were some fibres more perfectly formed, and also cells of a more rudimentary character. Again, the band which had resulted from the organization of the two fine threads of catgut which, from the smallness of their bulk, had no doubt vanished early, having had longer time to perfect its structure, was a comparatively well developed form of fibrous tissue, consisting of coarse fibres rather than of elongated cells, being thus intermediate between the merely fibro-plastic material of more recent growth and the completed texture of the original thread."

These demonstrations were early verified by a number of competent observers, and yet, so far as I know, so strong was the influence of previous prejudices, methods, and teachings, that the rational deductions from such valuable investigations and experiments were not broadened and applied to sutures until, in my own experience, the result of an accident in 1871. In the case of a strangulated hernia, where the opening was very large, Dr. A. P. Clarke, of Cambridge, and I refreshed the ring and sewed it with catgut, in order to prevent the descent of omentum or intestine, because of cough a produced by a severe bronchitis from which the patient was suffering at time of injury. We had no thought of cure. This, however, followed without any complication, and the patient remained without recurrence until her death, which occurred six years later.

A thoughtful observer could not help profiting from such an experience. I reviewed the interesting studies and observations of Mr. Lister, instituted a careful series of experiments on animals, and later accidentally had the satisfaction of verifying the same, histologically, on the human subject. Upon these facts and deductions as fundamental, I established the operation for the cure of hernia by aseptic suturing of the refreshed parts

in open wounds, and published the same in 1871, republishing with additional results in 1878 and 1881;² the priority of which, I believe, is not questioned by any, and this is the method now adopted by most operators in all countries.

The dissection is made as freely as required to secure intelligent operating. The sac, if at all large, is drawn down and its base sewed evenly across by a continuous double animal suture by a method which I devised years since and described as the shoemaker's stitch. This is easily effected by using a needle with the eye near the point, which is the only essential in the needle, although usually, for convenience, a long needle more or less curved is fixed in a handle. The needle, threaded, is introduced, unthreaded, threaded with the other end of the suture and then withdrawn, thus carrying with it through a single puncture the suture. In this way a stitch is made as a cobbler applies his thread from opposite ends through the same hole, and this is continued until the seam is complete, having only a single knot at the last stitch. The sac, if small, is returned thus sutured, if large, is cut off. Then, in a similar way, often using a needle of considerable curve, the refreshed structures of the ring are sewed together and, where there is sufficient tissue, a superficial layer is closed in the same manner, over this, and finally the skin. As I shall have occasion to show later, the skin also is advantageously coapted by a buried suture.

From this as a beginning, little by little, I have extended the application of buried suturing until I have treated wounds in nearly every part of the body by this method. First, very naturally, came the amputation of the breast and the coaptation of the deep structures. Here the stitch, as above described, admirably takes the place of the button suture, still generally used in heavy, thick flaps. It further serves as a hæmostatic in the careful coaptation of the parts and, by lessening the exudation, renders the use of drainage often unnecessary. Generally, even in large wounds, I do not use drainage, relying, in an *aseptic* wound, upon the easy absorption of any slight effusion. Of course, in such coaptation, where fixation and rest are required for only a brief space, a small aseptic animal suture is quite sufficient, and may be applied by any needle in varying stitch. However, I quite prefer the double suture as above described, because of the accuracy of adjustment and evenness of strain on the parts involved. In 1881, I first applied this method of suturing to the stump of the uterus in hysterectomy, and thereby was enabled to demonstrate the intraperitoneal treatment of the stump without danger of sloughing or hæmorrhage. About the same time, I commenced the sewing of the pedicle in ovarian cystoma in simi-

¹ Boston Med. and Surg. Journal, November, 1871, p. 315.

² Transactions of American Med. Assoc., 1878; Transactions of International Medical Congress, 1881.

lar way, and in both operations closed all free surfaces by a continuous glover suture taken through the peritoneum only. This was reported at the International Congress in London in 1881, and has since been ascribed to German authorities, but, so far as I have been able to learn, this is the first reference made to the subject.

The buried suture is one of the chief factors in my method of the restoration of the perineum. Believing that portion of the levator ani anterior to the anus, called the transversalis perinei, the part chiefly injured, which renders possible all the subsequent pathological changes in the vagina and uterus, I dissect the posterior portion of the vaginal attachment from the vulvar tissues and lift this forward, thus rendering it quite easy, with finger in rectum, to introduce deeply a curved needle. The tendon from the kangaroo, used in double stitch as before described, is preferred. In this way, as in no other, can the retracted ends of the transversalis be brought together. Then the external wound is closed in continuous suture, and a double pin is often found useful to hold at rest, as in a splint, the parts without strain.

The abdominal wall in laparotomies for any cause is closed as in hernia, which is only a modified laparotomy; the peritoneum is first sewed and then the remainder of the wound is closed under irrigation. Since adopting this method the resulting cicatrix has been firm and unyielding. I have several times thus operated upon large umbilical hernias with perfect cure. I have used a buried suture with seeming advantage in resection of the pylorus, in one case, and in several cases of intestinal obstruction already reported.

Operations upon the rectum are little improved by any of our modern methods. In hemorrhoids it is true, the clamp and the use of the thermo-cautery are a great advance upon the older methods of ligature, and yet, only recently, in New York, was I shown by one of our best surgeons, an instrument by which the ligature might be more tightly applied and which he thought was better than the cautery. Both are certainly objectionable and the injection methods were gladly welcomed as improvements. These are in turn faulty, since often the tissues, which are important to remain uninjured, are destroyed and the parts to be retained are unaffected. Some years since I operated upon two cases of prolapse by the double suture as described, the results were excellent. More recently I have, in a number of cases, operated in ordinary hemorrhoid in the following manner:

After stretching the sphincter, with the fingers in the bowel, carefully cut through the skin at the junction of mucous membrane to the subjacent connective tissue, this, with a little care, can be done usually almost without loss of blood. In a somewhat similar way divide the mucous coat above the ectatic vessels. Sew with double continuous stitch, if need be, completely around the bowel and then

cut away the mass. With a finer suture join the cut edges over the enclosed first line of suturing (the seam), and thus nicely coapt the parts. Iodoform in the rectum and a careful dusting from time to time lessens the danger of infection, and, if kept aseptic for a few hours only, renders, by cell infiltration, the wound soon free from danger of septic absorption. It is in reality a plastic operation and should be done with all the care of an operation on the face. The pain resulting from the operation is certainly far less than by other methods. The cure is effected in less time and the result is better than I obtained by other procedures. It is simple and easy to do and I commend it confidently to the profession. In varicoceles I tie the veins and seal with iodoform collodion.

The time and thought which many of us have spent upon devising surgical dressings to render the atmospheric contagion innocuous to wounds can hardly be estimated. All of this study and experience has been doubtless profitable and some of its fruitage yet valuable. However, given an aseptic wound, it is easy to retain it so, where drainage is not required, by sealing it with iodoform collodion. Thus treated, so far as prevention from infection is concerned, it matters little what external dressing is used. A number of days later the collodion scale can be separated from the skin, yet holding with it the upper border of each stitch, if taken in the ordinary way. These are separated at the line of the true skin, where the actively proliferating cells have infiltrated the suture and caused its absorption.

It somewhat recently occurred to me that this might be avoided and a gain made in safety and rapidity of repair, by burying even the sutures which coapt the skin. This is easily effected by using a blind stitch, generally best made with a straight needle, lightly but accurately including the connective tissue just beneath the skin from side to side. In this way the cut edges of the skin are brought evenly into apposition without the vestige of a stitch in sight. A layer of collodion completes the closure.

So far as I have been able to learn very little has been written upon this subject. At the late International Congress, Professor Vulliet contributed a paper upon the use of the Iodolised silk buried suture in perineorrhaphy. Thus prepared he claims they are innocuous and efficient. Silk can undoubtedly be made aseptic, but it is much more likely to prove an irritant than the tendon suture, and at the most is encysted, while the gut or tendon suture is replaced by connective tissue cells and there follows a living band in place of the fibres of the suture. It is evident, in most conditions, where sutures are required, if this can be attained, a great gain results. The possibilities of the buried suture are all dependent upon the great fundamental principles of aseptic surgery

which must be observed with the strictest accuracy. The material used must be reliable. I have for years, as a rule, prepared my own sutures, after Mr. Lister's formula, obtaining tendons directly from the hunters in Australia. Last year, in order to economize my rapidly diminishing stock of tendons, I used catgut, imported in the original bottles from a reliable English house, which appeared of excellent quality. In a series of operations performed within a few days, were two hysterectomies for the removal of large myomas. In each instance I sewed the uterine stump and closed the peritoneum with sutures from my former supply of tendon, but joined the recti with the English gut. In both cases, pus formed in the line of the gut suture, one recovered slowly with multiple local abscess in the thick abdominal wall; the second died the thirteenth day from systemic poisoning following a well marked lymphangitis. In neither was the abdominal cavity involved. One Alexander operation and one or two minor cases were also followed by supuration which seemed attributable to the gut.

In all continuous suturing, emphasis should be made not to draw the thread tight, remembering that it is *apposition* not *constriction* sought. The blood supply must be lessened as little as possible. This is diminished at the best by the multiple cuts of the needle and must not be added to by ligation of the enclosed parts. Within a few hours cell proliferation supervenes and the sutures should lie at rest in the tissues.

Perhaps there is no better test of the aseptic skill of the operator than in the introduction of the suture. The greatest care should be used that the thread does not become contaminated by touching septic parts. In the perineum this is especially difficult. The parts should be surrounded by towels wet in sublimate and the irrigation be constant. Septic material on the suture may be deeply implanted into the tissues and most dangerous infection follow. This should be emphasized all the more since it seems almost the only objection which can be raised against the method and in incompetent hands may result in the most serious outcome. To restore the tissues, layer by layer, to their original continuity seems the highest perfection of the end sought. As in fractures of the osseous structures, restoration, fixation, and rest are the factors upon which the resultant depend; a truth to be equally emphasized in aseptic wounds.

THE MAN WITHOUT A LARYNX, whose case was noticed a short time ago, died on June 26. He was in the habit of going to the St. Louis Hospital to have the cannula cleansed. He attempted to cleanse the cannula himself, but symptoms of asphyxia and other complications set in, and he died in a short time.

DISCUSSION ON INTESTINAL SURGERY.

FOLLOWING THE PAPERS ON THE DIAGNOSIS, PATHOLOGY, PROGNOSIS AND TREATMENT OF PERICÆCAL ABSCESS, AND ON INTESTINAL SURGERY.

Read in the Section on Surgery at the Cincinnati Meeting of the Association.¹

DR. EDMUND ANDREWS, of Chicago, expressed his appreciation of the valuable papers that had been read, and was ready to endorse much that had been said. He objected, however, to the too free resort to laparotomy in any cases, especially in diseases of the cæcum. Many of these affections will recover without resort to surgical interference. The abscess if left to itself will find an exit.

He reported a case in which a patient having advanced Bright's disease, of the cystic kidney form, complicated with advanced heart disease, developed an abscess below the umbilicus. Where it came from the doctor in attendance did not know. Finally the fæces began to discharge through the abscess opening. Exploration was resorted to. In following the fistulous opening of the abscess, the operator found that it passed through a mass of fat in the lower outer abdominal wall, then passed inward and upward toward the cæcum. Finding it to follow this course, he desisted from further operative procedure. The pus continued to be discharged; the fæcal discharge, however, ceased. But the patient died a short time after from the kidney disease. Had the patient been laparotomized, the speaker thought she would have died as soon if not in a shorter time.

DR. S. W. GROSS, of Philadelphia, being called upon for remarks, responded by saying:

I am very much handicapped here as I have not heard the papers or the discussion. From what Dr. Andrews has said, however, I judge that the question has been raised as to the propriety of laparotomy in cases of perforating appendicitis, perityphlitis, cæcitis, etc. No positive rule, I think, can be advanced in these cases. There are instances in which the abscess points posteriorly and opens behind the cæcum. Of course, no surgeon would think of opening the abdominal cavity in such a case. But I am sure that in all cases of perforation of the cæcum or appendix no surgeon will wait very long before he does a laparotomy.

We may meet, for example, with a case walking typhoid. Suddenly, intense pain is felt in the right iliac region, which pain is circumscribed; there is elevation of the temperature and increase of the pulse rate. In such a case I myself would not hesitate for a moment to lay open the abdomen. I would not wait for any other symptoms to appear, as there are indications of commencing

¹ See papers by Dr. Henry H. Smith, THE JOURNAL, June 9, Dr. Thomas G. Morton, June 16, Dr. J. McF. Gaston, June 23, Drs. R. Harvey Reed and L. S. McMurtry, July 7, and by Drs. J. Ransohoff and Penrose, July 14.

peritonitis. I think that if we neglect these cases the patients will almost surely die; and I believe, on the other hand, that if we operate on these cases, we save them.

DR. A. W. NELSON, of New London, Connecticut: I wish to make report in short of a case that I have recently seen. I think it may be of importance in connection with the advice that has been given to operate in these cases of disease of the cæcum and its region.

I saw in March of this year a young man who had been sick about ten days. The pulse was 100 a minute; the temperature about 100°. The skin was dry, dark, sallow, the tongue somewhat furred, showing some absorption of poisonous products from the alimentary canal. He had some pain and pointing in the right iliac region with obstruction of the bowel. This pointing was not regular; it was not that of a single abscess coming to the surface, but there were three or four places pointing. The symptoms not being well marked, and there not being a great deal of pain, I aspirated with the dome trocar and removed about six ounces of stinking pus. In introducing the needle of the aspirator, after passing in a short distance, I passed through a firm leathery structure, immediately beyond which I found the pus. I have not seen the case since, but I have a report from Dr. E. Munger, of Niantic, in attendance upon him, that he was immediately better in all of his symptoms. He had an operation of the bowels soon after, and in about a week, he was sitting up. But he had another abscess which opened at the umbilicus. The discharge has, however, ceased. I do not think my method of treating the patient was in accordance with the teaching of most of our experts. The pus was, I think, somewhere within the peritoneal cavity.

I have in mind a young man, who, several years ago, on two successive occasions, had all the symptoms of peritonitis, and in whom I anticipated the development of an abscess. In his case there was a very slow pulse and a subnormal temperature. He was seen by a number of distinguished gentlemen, by Dr. Barker, of New York, among others. He was given large doses of quinine, which perhaps had something to do with the subnormal temperature. The case resulted in the discharge of a large quantity of gray *grainy* and fetid feces. The patient indulged very freely at the table, and especially in coarse and uncooked food.

These cases lead me to hesitate about the adoption of the operation in all cases of this sort. There is certainly great danger in many of them, that you open not only the abdominal cavity, but also the intestine. If, for example, you have a certain amount of peritonitis and adhesions to the abdominal wall or other organs in the neighborhood, you may very easily cut through into the intestine and have a fistulous opening formed, al-

though I do not now recall any such cases. I think therefore that the operation is to be considered very carefully in every individual instance, before we decide upon performing it. Of course, laparotomy should be resorted to without hesitation, in certain emergencies, and in typhoid fever with perforation, as spoken of a moment ago by Dr. Gross. I do not think, however, that there is nearly so much danger in the introduction of the needle of the aspirator, in the proper cases, as there is in making an incision with the knife.

DR. S. H. WEEKS, of Portland, Maine, remarked that the point of greatest importance in connection with the study of laparotomy is the line of incision which is chosen, in cases in which laparotomy is indicated for perforation of the appendix or cæcum. There exists to-day a doubt as to the best point of incision. Shall it be directly in the median line, or immediately over the cæcum and appendix.

Within the last few months I have been associated with several cases. In one case my colleague made an incision in the median line, and he was obliged after making it to extend the incision at right angles to this in order to reach the point of difficulty. It was evident to our minds at the time that the incision directly over the cæcum would have been better. A few months after that I had occasion to make the operation upon a physician in our town. I made the incision directly over the cæcum and reached the point of difficulty at once.

One word with reference to where the cæcum may be found. Search through the anatomies, search through the majority of the surgeries and you will find no land-mark, no definite point on the skeleton by which you may find this organ. I have made a number of examinations with a view to the determination of this point. If I understood Dr. Morton aright yesterday afternoon, he stated as a result of his own dissections, that the incision should begin at a point about an inch above the middle of Poupart's ligament, and to the outer side of the right linea semilunaris, to be continued from this point upward or outward or upward. He stated that the cæcum lay directly under a point two inches distant from the right anterior superior spinous process on a horizontal line drawn from this process toward the median line of the abdomen. Now, my experience has been from these cases, less than half a dozen in number, that the cæcum is found about one inch above and an inch or a little more internal to the anterior superior spinous process. This is an important fixed point of the skeleton which we can always place our finger upon, and use as a guide to the seat of the disease.

DR. H. H. MUDD, of St. Louis: It seems to me, Mr. Chairman, that this field offers a good chance for the exercise of surgical judgment. The

difficulty here is, as in almost all cases of abdominal operations for obstruction, in the diagnosis and the determination of the conditions which demand or do not demand operative procedures. Ileo-caecal obstruction offers a good chance for a discriminating diagnosis. We have three sources for the appearance of a tumor in this region: we have first the accumulation of faeces, second an accumulation of gas, and third an infiltration of the cellular tissue about the walls of the intestine, a cellulitis. Now, if we have symptoms of irritation, with moderate obstruction preceding the final development of a tumor, we have something to guide us to the belief that we have an inflammation of the intestinal wall; and if, supervening upon this, we have a sudden acute attack of pain, which is persistent, which is evidenced by increased distention; which is evidenced by all the usual symptoms of perforation, then we have conditions which favor operative procedure at once. But if we have developing with these a slowly forming tumor probably resulting from the infiltration of the cellular tissue of the region, then we have a condition in which we may defer operative procedures for some time. I have seen a number of these cases recover simply after watching; and I have seen others get well after a laparotomy. I may mention that not long ago I saw a case of abscess in the lumbar region; the abscess pointed, was opened, a lumbricoid worm was discharged, and the woman recovered without further operative interference.

I saw a case only last week in which I made a laparotomy under rather unusual circumstances. The patient had had recurring attacks of pain. She had been in the hospital eleven weeks with symptoms of obstruction, a tumor also presenting a little to the right but near the median line. The tumor was overlaid by folds of the intestine, as we were able to determine by hearing the fluid and gas gurgling upon making pressure with the hand. By examination of the rectum I was able to feel the tumor, and could even get fluctuation by rectal palpation. From this I came to the conclusion that he had an intraperitoneal tumor. I made a laparotomy, found a large abscess in the peritoneal cavity, opened it, drained it, and at the post-mortem three days after found this condition of affairs: The colon and a coil of some portion of the small intestine, I am not sure just what portion it was, were in process of uniting, the colon lying in front of the tumor. I found at least 13 inches of the small intestine surrounding this abscess, being held down in the pelvic cavity with such firmness as to cause the lumen to be obliterated by the distension of the abscess. At no point in this region do I think this tumor could have been reached without perforating the intestine itself. It would have been dangerous to have attempted to reach it without laparotomy.

The question which has troubled me most in all

these cases, and which I think is one of practical importance for us to consider, is this: Have we in perityphlitis, typhlitis, appendicitis, etc., a reasonably fair chance to interfere after a suppurative peritonitis has developed?

About the incision—I am not so sure that the inguinal region is the best line. In many instances it will answer, but not as an unvarying rule, because there is no part of the intestine which is so frequently displaced as in this portion.

DR. J. McFADDEN GASTON, of Atlanta: I am particularly anxious to question Dr. McMurtry with reference to cases in which the cæcum is seriously involved, in the trouble: which is quite different from a case of perforation and extravasation into the peritoneal cavity. I did not understand from the report of his case that he had taken any special precautions against extravasation of faecal matter into the peritoneal cavity during his operation. If there had been extravasation, it would certainly have been proper to wash out the whole abdominal cavity thoroughly in order to get rid of this matter.

DR. L. S. McMURTRY, of Danville, Ky.: In regard to the question propounded by Dr. Gaston, I wish to say that the case I have reported was a typical case of septic peritonitis, with perforation of the gut as the direct cause. The peritoneal inflammation was recent, severe and spreading. I attribute the success of the operation in great part to the fact that it was done promptly, while the peritonitis was limited in area and before the entire membrane had become infected throughout.

I think some confusion has crept into the discussion of these important papers from failing to observe the proper distinction between intraperitoneal and extraperitoneal inflammations. When the appendix is attached by the inflammatory process to the abdominal wall, and the perforation is shut off from the peritoneum thereby, an abscess forms in the cellular tissue, and follows the connective tissue planes toward the surface. Opening such an abscess is altogether a distinct operation from abdominal section for perforative peritonitis.

In conclusion I would reiterate the statement made in my paper, and now suggested by the discussion, concerning the use of the aspirator in these cases. As an exploring instrument in these cases it is unreliable, while the danger of infecting the peritoneum by the needle is a real danger. An exploratory incision is more satisfactory and less dangerous.

DR. JOSEPH PRICE, of Philadelphia: I have but a few words to say in regard to this question. I simply accept Dr. McMurtry's paper as legal tender. What he has done and what Dr. Gross has said illustrates very clearly what Mr. Greig Smith has said: "There is passing over America to-day a wave of deep surgical wisdom and originality." Superficial surgery is all very well, but

it is not sufficient in these cases. We must seek the origin of the trouble; we must find the perforation. This Dr. McMurtry did, he set himself to find the cause of the trouble, and having found it, removed it. A member of our profession was suffering and he saved him. I do not agree with what has been said in regard to the use of the aspirator in these cases: with it you can see nothing; you work in the dark. This has been well expressed by Mr. Tait when he said: With a trochar you can feel or see nothing; you make a small opening, drain away the foreign matter, but you cannot introduce a drainage tube.

Surgeons that have not had some special training have great fear about resorting to abdominal section. We have now no fears whatever at opening the peritoneal cavity, as it can be done almost with impunity. At present, too, there is nothing so simple as dealing with pus. I have no fear of deluging the peritoneal cavity with pus. I have recently had several cases in which this occurred; and when I left home all were doing well.

As for the diagnosis of alarming conditions in the abdomen, I would this day rather depend upon a diagnosis made by a so-called general practitioner than I would upon that of a so-called general surgeon.

The only safe rule in regard to troubles in this region is to open the abdomen, remove the confined matter and do it thoroughly; do not leave an oyster-shell in the abdominal cavity.

DR. E. M. MOORE, of Rochester: I have listened to the papers with intense interest; and they are certainly as good papers as could be brought before any Association. But it seems to me that I have failed to hear one or two things that come within the experience of every general practitioner. Now is it not the experience of all of you that you have cases of what was called perityphlitis, occurring in the right side, affecting the cæcum, that come on day after day, and finally get well without surgical interference, and the rule is that they get well? I have seen it over and over again; and my experience has been that if it was sufficiently local, it was sure to get well.

And when we speak of laparotomy, did I understand Dr. Price to say that the operation of cutting into the peritoneum is absolutely free from danger? I must say that I am utterly astounded!

Now how are we to make out the cases upon which we are to operate? We have just heard that there is tenderness and that a tumor is present. Now I wish to make this statement: That if there is a tender spot anywhere in the abdomen and there comes a tumor in the region, it is by no means sufficient to warrant us in opening the peritoneal cavity. We must be on our guard. It so happens that in the right iliac region you will occasionally have these phantom tumors; a

hard mass, that on palpation feels like a board. The patient complains of tenderness. You make percussion and you get resonance. You have gas there. Sometimes you have in connection with this certain symptoms which will help you out in your diagnosis. When you have suddenly supervening upon a moderate degree of inflammation, a violent, sudden attack of peritonitis, coming as a blow, as it were, you then have evidence of perforation into the peritoneal cavity, with this tendency toward sepsis. It is not always easy to determine this point. I have experienced this difficulty. I have opened these cases in which pus was discharged, but I have never had to protect the patient, as there was always a cavity formed sufficiently separated from surrounding tissues. I have opened them from behind. In some of these cases a foreign body will be discharged through the opening, as where a cherry-seed has gotten into the appendix. I remember one case where, when the drainage tube was taken out, there was at the end of it the seed of an orange.

Laparotomy, gentlemen, I cannot believe, is so innocent as is claimed by some.

DR. DONALD MACLEAN, of Detroit, Chairman: I think it would be a mistake if the dictum should be allowed to go out from this Section, that the abdominal cavity can be opened with perfect safety.

DR. P. S. CONNER, of Cincinnati: I am sure that I voice the sentiment of the Section when I express high appreciation of the papers read yesterday—papers which presented to us the results of experience and experiment, and gave us positive rules in the treatment of cases of most difficult character; and last of all we had the most beautiful demonstration that I think has ever been given to the profession of this country. Nothing could exceed the labor and patience with which were worked out the experiments presented to us yesterday by Dr. Semm. He literally, absolutely, in every sense of the word, threw light upon an exceedingly dark subject. I am very certain that no class of cases come before us which give us more anxiety either in the detection of the difficulty or in the treatment of it, than intestinal obstruction. If we were to believe all we read and a good deal we hear, we would suppose it an easy matter to determine the character and location of intestinal obstruction. The diagnosis has been very positively laid down in the books, but I think that I can appeal to the surgeons in this room whether they do not agree with me, that however clear it may be in print, it is a very different matter with a patient in bed. It is sometimes very easy to determine what the nature of the difficulty is; in other cases, notwithstanding the employment of the most accurate methods of investigation, it is very difficult to determine what the difficulty is, or where that

difficulty is located. In some cases too it is easy, in others difficult to determine what is to be done; but after all it is the determination of the difficulty itself which is the great trouble.

Leaving out of consideration the various separate forms of intestinal obstruction, whether due to impaction, to invagination, to bands, twists, compression by tumors, and what not, we have two kinds of cases to deal with: First, rapidly developed cases, coming on in patients in good health; and second, slowly developed cases, occurring in individuals whose health is good or bad. To these we might add a third form, namely, suddenly developed cases following old chronic forms of intestinal trouble.

Letting the patient alone, the difficulty may sometimes terminate in recovery, but may, and frequently will, result in death. When recovery follows the let-alone plan of treatment, we congratulate ourselves that recovery has taken place. And who of us has not seen cases in which active interference has resulted in the relief of the patient, and again where it has proved fatal. I have twice in my own practice seen, after the release of a strangulated hernia, absolute paralysis of the bowel continue, and the patient died just as certainly and just as quickly as though no operative procedure had been undertaken.

To discuss this matter to-day is a very different thing to discussing it ten years ago. Abdominal surgery has made rapid progress; some of it, I was about to say, too rapidly made, and liable to lead in the wrong direction. Active interference is the only rule to-day. Our duty is to discover the seat of the lesion, to remove the obstruction, and to put the patient in a proper way for recovery. A world of truth was uttered yesterday by Dr. Moore, when he took exception to the remark that the abdomen might be opened with impunity. It is not a light thing to open the abdomen. Laparotomies have killed patients, as we know by experience and by statistics, which latter, I am sorry to say, are not always as reliable as they ought to be.

Where a positive diagnosis can be made the belly should be opened. The chances for death are almost certain if the patient is let alone, and the chances are certainly not worse where the abdomen is opened. If I were myself the subject of an accident of this sort, it would not be many hours before I should ask some of my friends to open me and see what the condition was; relieve it if possible, and if not, let me die in accordance with the art.

Sometimes the difficulty is of such a character that it cannot be removed. Sometimes the patient is in such desperate straits that although removal is possible, yet the operation would kill on the table. If the obstruction is due to strangulation, to the slipping of a knuckle of the bowel

through an opening in the mesentery the constriction can be relieved; if it is due to organic disease of the bowel, it may be possible to take away a section of the intestine, and restore the continuity by suture or to form an artificial anus, and for the time save the life of the patient.

It has sometimes been a matter of great difficulty to determine where the obstruction is located after the abdominal cavity has been opened. It is vastly different to open the abdomen for the removal of a tumor where the abdominal walls are immensely distended, and opening it for the relief of such a condition as that under consideration, where as soon as the abdominal walls are penetrated, the viscera protrude.

DR. S. H. WEEKS: In the first place I wish to express my high appreciation of the great value of the papers that have been read. And the only difficulty I feel upon my part is to know what to say in the brief space of ten minutes. The discussion I understand is limited to the treatment of intestinal obstruction in its surgical aspects. I wish to lay especial stress upon the last two words, because it is not every case that is to be treated by surgical measures; many cases are to be treated by medicinal means. It is not every case that should be subjected at once to operative measures; a certain time should be allowed to elapse. Several years ago, when laparotomy was first brought to the attention of the profession, for intestinal obstruction, I was called to see several cases in which the symptoms were obscure. The first was a man in business, 40 years of age, previously well, was suddenly seized with pain in the right hypochondriac region. (Here let me say that the pain in acute intestinal obstruction is not always at the point of obstruction.) This case was supposed to be one of the passage of biliary calculi. The symptoms were great pain, prostration, cold surface, feeble pulse, rapidly followed by nausea, vomiting, which became stercoraceous in character, diminished quantity of urine. The patient died in four days. The autopsy revealed an obstruction four inches above the cæcum, which could easily have been relieved by a surgical operation if done in time. Shortly after this case, I was called to another, a lady in fair health, who manifested almost the same symptoms with almost total suppression of the urine, and great restlessness. She died in forty-eight hours. The autopsy revealed a strangulation high up occasioned by a fold of omentum being wound around a knuckle of the intestine. Again a few months later, after having had my attention called to the importance of laparotomy in these cases, I was called in consultation to see a man previously well, who was suffering from all the symptoms of profound prostration; he was almost moribund. He and his friends were ready for almost any operation. We operated upon him; found the strangulation, relieved it, he was

immediately relieved of his pain and vomiting, but died in 48 hours from exhaustion. The operation was delayed too long.

It is an important matter in connection with these cases that the operation must not be delayed until the intestine becomes gangrenous.

Now let me call attention to the most difficult part of the matter under consideration, and that is, the diagnosis. What are the symptoms which characterize acute intestinal obstruction, and which justify the surgeon in performing laparotomy. We all know that in regard to the operation of external herniotomy for the relief of strangulated, external hernia, a great change has come over the minds of surgeons in the last 20 years. I remember when we all thought that it should be the last resort. Now we claim that the earlier a strangulated hernia is relieved the better. I will go a step further, and I will claim that no surgeon to-day ought to let a patient die of an internal strangulation any more than he would allow a patient to die of an external strangulated hernia. When he finds a patient suffering from the symptoms which characterize an internal strangulation, then I think he is justified in resorting to the operation of laparotomy. These symptoms are, sudden stoppage, great pain, great prostration, feeble pulse, anxious appearance, restlessness, nausea, vomiting, speedily becoming stercoraceous. When the surgeon feels morally certain that he is in the presence of an internal strangulation, a great responsibility rests upon him, and he makes a serious mistake if he fails to perform his duty, by making laparotomy and relieving the strangulated bowel.

CASE OF ANTEPARTUM HOUR-GLASS CONSTRICTION OF THE UTERUS.

Read before the Cambridge Society for Medical Improvement, April 23, 1888.

BY AUGUSTUS P. CLARKE, A.M., M.D.
OF CAMBRIDGE, MASS.

At 2 A.M., February 1, 1888, I was called to attend Mrs. B., aged 42 years, who was in labor at term for the fourth time. The patient had awakened at 12:30 A.M., when the membranes ruptured and the liquor amnii escaped. Her oldest child was 17 years of age, and at her birth there was nothing peculiar about the labor the duration of which was only twelve hours and ether being administered during the last hour. The next child was 11 years of age and the time occupied by the labor of her birth was ten hours. Ether was given during the last two hours. The third child was 7 years old, and ether was given during the last three hours of the labor. The time occupied by that labor was twelve hours.

At the time I was called, on February 1, the pains occurred every few minutes, though there was scarcely any dilatation of the os. In fact,

during each recurring pain the os and cervix became rigid and the index finger was with great difficulty passed through the os, and it brought up against the internal os, which appeared to be in a closely constricted state. The pains continued to increase in frequency and strength and the patient within an hour after my arrival was compelled to go to bed. The pains continued to recur at intervals of every four or five minutes and were of so severe a type I deemed it necessary at 6 A.M. to administer small doses of morphia. The cervix was unusually elongated, and while the external os became more open and dilatable the internal os and the uterine segment immediately above presented a firm and closed barrier against any appreciable descent of the head of the child. As the uterine pains grew stronger the foetal head could be felt to mount up against and over the os pectinis. At 9 A.M. the patient was allowed to inhale small quantities of ether, which had the effect of controlling in considerable measure the severity of the pains.

As the case dragged on frequent and guarded attempts at manual dilatation were made, to overcome the constriction at the lower segment of the uterus. The moderate use of ether was continued at intervals until 3 o'clock P.M., when the fingers could be passed on at the beginning of a pain through the constricted ring of the lower segment of the uterus, but almost invariably before the close of each pain the fingers were immediately forced outward and the upper zone of the uterus, became a closed cavity. By patience, perseverance and by gentle manipulation, and continued use of ether, the chief obstacle to the descent of the head was overcome, and a strong female child weighing eleven pounds was born at 5 P.M., the labor before the birth of the child having occupied 17 hours. During the descent of the foetus, as it emerged from the vulva, firm but gentle pressure was maintained over the fundus of the uterus, outside, and the shoulders and body of the child were not hurried but were allowed sufficient time in the passage of the pelvic arch. As soon, however, as the child was free all pains ceased and the placenta became imprisoned in the uterine cavity—above the lower segment. Fully one hour elapsed before the placenta was brought away, and it became necessary to resume the use of ether, and to carry the fingers and hand along the funis through the internal os and lower segment of the uterus, which were at first firmly closed and only yielded entrance by gentle and persistent effort with the hand. Hæmorrhage for awhile became alarming, but was at length controlled, and the patient rallied that evening and became quite comfortable.

There was not the slightest laceration either of the perineum or of the cervix. There was no deformity of the pelvis, and the diameters of the foetal head were normal, and the head showed no

indication of compression, nor was there any contusion of the scalp. The position of the child was favorable, the nape of the neck being behind the left acetabulum and the bregma to the right sacro-iliac synchondrosis.

The early rupture of the membranes undoubtedly occasioned to some extent the uterine constriction, and the loss of the amniotic fluid prevented the expansion of the soft parts so essential in the first stages of labor. After the close of labor quite a large mass of internal hæmorrhoids were extruded. These hæmorrhoids must have contributed to the spasm of the uterine tissue, as it is well known that any irritation occurring about the rectum or anal sphincter is likely to be transmitted to the neighboring organs, and especially to the genital tract, and there become the centre of nervous disturbance. Ramsbotham regards hour-glass contractions as an occurrence in which the whole cavity of the uterus is the upper chamber the cervix the constricted portion, and the dilated vagina the lower segment, and that a coagulum of blood is usually in the lower chamber. The same author coincides with the idea that in cases in which hour-glass constriction, or chaton, as the French say, is present the placenta or some portion of it is adherent. He does not regard the occurrence of hour-glass constriction as being so common as authors had heretofore believed. Cases of flooding, he remarks, do not depend upon the occurrence of this peculiar kind of contraction. The uterine constriction, he further observes, is of different kinds—sometimes only the central fibres contract, leaving those of the fundus and cervix relaxed, and thus preventing the natural descent of the placenta.

In the *Boston Med. and Surg. Journal*, 1883, Vol. 109, page 374, Dr. J. Stedman reports a case in which the constricting ring, instead of being circular was transversely elliptical, and the uterus itself was very movable and hard to fix. After an hour and a half he succeeded in passing the hand, when the placenta and all were expelled by the uterine contractions. The hæmorrhage that occurred was not alarming. Some observers maintain that anæsthetics predispose to hæmorrhage, while others, as Dr. Boardman, have found that ether given in the usual way exerts a favorable influence on the progress of the case.

Dr. Boardman enumerates several factors that may predispose to hæmorrhage, and which are in danger of being overlooked; the resulting hæmorrhage is ascribed to the influence of ether. In the management of the case here reported I discontinued the use of ether as soon as the child was born. After waiting an hour, and there being no return of the pains I thought it necessary to resort again to the use of ether because there was hæmorrhage that had to be controlled before the patient should become exhausted, and the insertion of the hand into the cavity of the upper uterine segment

appeared quite impossible without the help of the relaxing effect of an anæsthetic. The persistence of the antepartum hour-glass constriction disclosed the fact that it would be unsafe to rely on the unaided powers of nature to overcome an obstacle the presence of which had placed the lives of the mother and child in such extreme peril. After the hand had gained admission through the uterine constriction, the placenta was reached, and without further serious difficulty brought away, and there was no indication that any part of the placental mass had been adherent. The constricting ring was elliptical, but the greatest degree of resistance it offered was at the posterior aspect of the uterus.

In considerable measure morphia and ether had the effect of preventing the occurrence of the lengthening and attenuation of the textures of the uterine cervix, a condition so liable to take place in cases in which a constricting ring of the uterus occurs. This condition of the cervix began to show itself as soon as the uterine contractions became frequent and of an energetic character, and the line of constriction just above the symphysis pubis, indicating the division between the cervical and fundal portions of the uterus, was easily recognized both by palpation and inspection of the abdomen.

As regards the treatment of cases in which such constriction of the uterus occurs, I have but little to add aside from what has already been mentioned. Suffice it to say that my experience in this, as in a few other similar cases that have come under my care, has led to the conviction that treatment in which manual or mechanical interference plays an important part should be conducted with the least possible amount of force, and it is often better to defer for awhile all mechanical measures than to incur the hazard of hastening or prolonging the dilating process. All oxytocics should be avoided. Opiates and other anodynes, as also anæsthetics, should be resorted to, but not in quantities sufficient to reduce the strength of the patient. The patient should be urged to take at short intervals all the liquid nourishment possible. Stimulants should be at hand, and should be given liberally should signs of exhaustion appear. The advantage the use of antiseptics may afford should not be overlooked.

I should have stated that I continued my visits daily until March, when the patient was able to leave her bed. Soon after she went out and took exercise in the open air. The chief obstacle to her early recovery appeared to be occasioned by the excessive loss of blood and by the presence of the hæmorrhoids already mentioned. These had become inflamed and were the cause of considerable constitutional disturbance. There was for several days an increase of temperature varying from 100° to 101.5°, and occasionally reached as

high as 102° , but as soon as the inflammation of the hæmorrhoidal mass subsided the temperature became normal. There was at no time any evidence of septicæmia, and there was no suspicious discharge nor bad odor from the vagina.

During the second week after labor the patient had almost every day a severe attack of pain in the right hip, which lasted for several hours. This pain was evidently of a neuralgic type, and was at length controlled by the administration of a pill composed of opium, digitalis and quinine. Up to this time the complexion was sallow, the lips pallid, and the whole organism was in an exhausted condition. I should further say that Mrs. B. some years previous had been subject to severe attacks of gastralgia, which only yielded to full and frequent doses of opiates. She had not however experienced such an attack for several months immediately preceding her last pregnancy. I mention these facts because they show a constitutional tendency towards the occurrence of reflex irritation which in its various manifestations comprises, as I believe, spasm or constriction incident to the uterine tissue. These may lead to the development of that peculiar condition known as antepartum and postpartum hour-glass contraction.

TWO CASES OF GUNSHOT-WOUND OF THE ABDOMEN IN WHICH THE HYDROGEN-GAS TEST WAS APPLIED.

BY J. L. HILLMANTEL, M.D.,

HOUSE SURGEON COOK COUNTY HOSPITAL, CHICAGO, ILL.

The report of the following two cases is given to show the result of the application of the latest method of diagnosis of perforating wounds of the intestines, as devised by Dr. N. Senn, of Milwaukee.

Case 1.—P. C., male, æt. 50 years, in good general health. Was shot at 2 P.M., July 4, by a man sitting about eight feet directly in front of him. The calibre of the ball could not be ascertained. A physician was summoned, who made an examination, and after introducing a probe several inches, he advised sending the patient to the Hospital. He was brought here sitting in a carriage with no dressing on the wound. Upon his entrance here, 7 P.M., the abdomen was disinfected, the wound sealed, and a hypodermic injection of m vij of Magendie's solution given.

Examination.—Patient conscious, no marked pallor, hands cold. Pulse full and 96 a minute; temperature 99° . Some pain in abdomen. An opening with blackened margins was found just to the right and on a level with the umbilicus from which a small quantity of bloody fluid oozed. Abdomen not distended, but showed a changing line of dullness, corresponding to changes in posi-

tion of patient, and indicated the presence of fluid in the peritoneal cavity. Liver dullness present. Patient very restless. Introduction of catheter gave about ten ounces of normal urine. Rectum filled with fæces, but contained no blood. After about 15 minutes he vomited for the first time since injury; vomited matter contained no blood. Hydrogen gas was then insufflated, the entire intestinal canal being distended until the man complained of a tense abdomen and "belched up." The gas could be accurately followed, passing through the ileo-cæcal valve with a gurgle, next filling up the umbilical region and finally distending the stomach. During this time the wound was very closely watched to notice the escape of gas. None escaped, but some bloody, serous fluid was forced out by the general distension; and as the wound was all this time covered by fluid, gas would have escaped in bubbles. A stomach tube was then introduced, which procedure caused much straining.

It was decided that the pressure exerted and the escape of gas from the mouth were sufficient proof that the intestinal canal was intact and that laparotomy was not indicated. The wound was dressed antiseptically, patient put to bed at 9 P.M. and treated as after laparotomy. He rested fairly well during night. Urine passed normally. Bowel's quiet for three days when he received by mistake some potatoes and mush, after which he had one or two normal bowel movements daily. He was then put on light diet.

July 10th, the wound was dressed and found to be closed. An area of induration was present around the same of the size of a quarter of a dollar, which was somewhat tender. On the same evening patient vomited once, ejecting only the ingesta. The next morning patient felt as usual. The pulse had been between 72 and 96 a minute all this time; temperature between 99° and 100° . At noon patient vomited again and pulse rose to 110. During the afternoon he vomited twice more and pulse gradually rose to 140. Temperature 100° . At 7 P.M. patient bathed in perspiration, pulse very weak.

Dr. Fenger made an examination and found a small tumor in right hypochondrium, which was painful on pressure. No abdominal distension, percussion gave flatness especially over right side. Dr. Fenger decided to make a laparotomy immediately. An incision, 5 in., was made to right of umbilicus. The stomach was found dilated. Recent adhesions between coils of intestines omentum and mesentery. Upon breaking through these, about 8 ounces of thin, milky, purulent fluid gushed out, omitting a slightly fæcal odor. The patient was turned on his right side and the cavity flushed with warm boracic acid solution. The remainder of the peritoneal cavity was protected by shutting it off with a hot towel. A large glass drain was inserted together with some gauze,

abdominal walls closed and dressed. Ether was used as an anæsthetic and continual stimulation was necessary. The abscess cavity was washed out every two hours with warm boracic acid solution. The patient's pulse gradually failed and he expired eight hours after the operation.

Autopsy. Ten hours after death. On opening the abdominal wound the omentum and intestines were found agglutinated. The glass drain was in the bottom of a pus cavity just to the right of the stomach, between it and the turn of the duodenum. On separating the adhesions, three more pus cavities were found; closed off by adhesions formed between the omentum, pancreas, and coils of ileum and possibly following the tract of the bullet or probe. No fluid was found free in the general peritoneal cavity, but all intestines presented a congested appearance. The entire gastrointestinal canal was searched for perforations, but none were found. The pus in the cavities contained no fecal matter. The remaining abdominal organs were also found congested. The stomach contained dark grumous matter.

Case 2. Patient, male, æt. 23, in good health, was shot with a pistol, calibre 32, held in his own hand during the act of striking another person with the butt-end. One and one-half hour after injury he was brought to the Hospital. Complained of some pain in abdomen. Vomited shortly afterward and made several ineffectual efforts at defecation. Vomit contained some clots of blood. Dr. Fenger was summoned.

Examination. Patient conscious, very thirsty. Pulse somewhat feeble and 100. A bullet wound was present, one inch to right and on a level with umbilicus. Percussion showed presence of liver dulness and a line of dulness extending down on right side of abdomen in a curved direction, concave toward umbilicus, from liver to pubes, pointing to the presence of fluid in the abdomen. Catheterization gave 6 ounces of normal urine. Patient etherized and hydrogen gas-test applied. On introducing the rectal tube for that purpose, blood was found present in the rectum. The gas, with only slight pressure, was soon heard to enter the abdominal cavity with a gurgling sound, and in a few seconds issued in bubbles from the bullet wound. On application of a lighted candle these burned in spurts. Dr. Fenger decided to perform laparotomy, as the proof was conclusive that the intestines were perforated.

Incision, 6 inches, in linea alba, and subsequently enlarged to 10 inches. A large quantity of blood escaped with a gush. Almost the entire abdominal cavity was filled with blood. Fourteen perforations were found between the ileo-cæcal valve and the stomach; also two severe contusions of the external coats of the intestines, so that it was deemed necessary to cover the places by peritoneal sutures. Besides these, four holes were found in the mesentery in which were numerous

bleeding vessels. The perforations were closed by Czerny-Lembert sutures. In two places two perforations were so close together that they were included by one line of suture. At two other points there were four perforations so close together that it was necessary to remove these portions of the gut. This was done by resection, the cut ends closed, and the continuity of the lumen restored by lateral approximation with decalcified bone plates after the method of Dr. Senn.

After all the apertures found were closed and the vessels tied, the intestines were replaced and gas again insufflated. The sutures proved to be absolutely air-tight. Some bubbles, however, escaped from the upper extremity of the incision, but Dr. Fenger thought it came from the peritoneal cavity. The abdomen was flushed, but the patient, from shock and loss of blood, was expiring. During the operation the entire mass of intestines was necessarily exposed, but was kept covered with towels and hot boracic acid solution allowed to trickle over them. Constant stimulation was necessary to keep the patient alive.

At an interval of an hour two infusions of saline solution were made, 16 ozs. being used each time. A marked beneficial effect was noticed on the pulse as well as on the general condition of the patient. Abdominal wound not closed, as the patient had expired. Duration of operation two hours and three-quarters.

Autopsy one hour after death. On removing the intestinal tract the following appeared: Two contusions in the mesentery of descending colon; large contusion with extravasation of blood in transverse colon with a wound in the mesentery; contusion of mesentery at ileo-cæcal valve; contusion of coats of ileum 8 inches above ileo-cæcal valve; extravasation of blood in mesentery 14 inches above valve; perforation 23 inches above valve in intestine (sutured); the same 32 inches above previous (sutured); same 30 inches above previous (sutured); same 18 inches above previous (sutured). Bone plate approximation 9 inches above last, where resection of 3 inches of gut had been made, the resected piece presenting four perforations. Extensive extravasation of blood immediately above this point in mesentery. Contusion of intestine 9 inches above the resection. Contusion and extravasation 29 inches above same point; perforation 47 inches above same point (sutured). The second place of lateral apposition was found 11 inches below pylorus, where 2½ inches of gut with four perforations had been resected. Finally, a perforation was found in the pyloric end of the stomach which was not sutured.

The remaining viscera were found normal. After a diligent search the bullet could not be found, although all the organs were examined, as well as the entire spinal column exposed. A minute dissection could not be made, as the section had necessarily to be stopped, but the supposition was

that the bullet had lodged in the muscles of the back.

REMARKS.—In the first case we have an excellent illustration of the proficiency of the gas-test in cases in which there is no perforation, and we may say with safety that one unnecessary laparotomy was prevented, the exit of the gas through the mouth and the absence of the same in the peritoneal cavity after complete distension, proving that the walls of the gastro-intestinal canal were not broken. This patient was not anæsthetized, and the insufflation caused no inconvenience besides the belching. The secondary laparotomy became necessary after the formation of abscesses along the tract of the bullet. The formation of these was undoubtedly the result of infection through the external wound and not through extravasation of feces.

In the second case we see the gas escaping in bubbles with the greatest ease from the bullet wound in the parietes, removing all doubt as to the diagnosis. In this instance the gas-test might be said to have been superfluous, as the other symptoms and signs were conclusive, but the time occupied was so short, and the result so striking that the procedure can hardly be criticised. This method of diagnosis will do its good work by its negative results, and will undoubtedly prevent many unnecessary exploratory laparotomies, as it did in this first case, and it should be applied in all doubtful cases before a patient is exposed to the great danger incurred by exposure and close examination of the entire abdominal cavity for the purpose of searching for that which does not exist.

Furthermore, by the application of the test after all perforations found have been sutured, the existence of more apertures may be ascertained by the escape of gas; it also proves the competency of the intestinal sutures, and the permeability of the canal at the points where the bone plates are used.

The gas-test was applied in the presence of Drs. Price, Allport, Brown, Hodges, Hart, Hickey and Hektoen.

I. THREE SUPRA-EPIGLOTTIC BENIGN NEOPLASMS. II. A NEW PROCEDURE IN THE TREATMENT OF CYSTIC GOITRE.

Read before the Section on Laryngology of the Ninth International Medical Congress, Washington, D. C., September, 1887.

BY WILLIAM PORTER, M.D.,

PHYSICIAN TO ST. LUKE'S, AND TO THE PROTESTANT HOSPITAL;
CONSULTING PHYSICIAN TO THE CITY HOSPITAL, ST. LOUIS.

I. Three supra-epiglottic benign neoplasms.

(a) Cyst of posterior pharyngeal wall.

This was the case of a poor woman about 27 years of age whom I saw in my clinic. Her only symptom was dysphagia, and the constant evi-

dence of something "sticking in her throat." A direct examination revealed a cyst of the mucous membrane, about $\frac{1}{2}$ -inch in diameter and projecting fully $\frac{3}{8}$ -inch from the posterior pharyngeal wall, a little below the level of the tonsils. With a curved pointed bistoury the sac was freely laid open from below upwards. To the inner surface tinct. ferri hydrochlor. was applied, and the patient made a quick recovery, though until she ceased her visits there was some thickening at the site of the cyst.

A mucous cyst projecting from the back of the epiglottis, and partly covering the glottis, is recorded by Durham (Med.-Chir. Trans., xlvii), also retro-tracheal gland-cysts are described by Prof. Gruber which opened by several sinuses into the trachea.

(b) The second case is one which is yet under observation (August 10, 1887). A young married lady, very nervous but of good physique, was brought to me on account of an incessant cough and some difficulty in swallowing. A papillary growth was found, having its origin just below the left tonsil, but entirely distinct from it. The papilloma encroached upon and hung over the left wing of the epiglottis. It was as large as an ordinary Malaga grape, having a thick, strong pedicle. The patient declined operative interference, but I succeeded in getting her to consent to the application of a destructive agent. Chromic acid was repeatedly applied to the pedicle, and in a fortnight the nutrition of the tumor was evidently much impeded, and in another week it sloughed so nearly off that it was easily detached by forceps. The troublesome cough is nearly gone, though the patient has yet some irritation about the original site of the tumor, but this is disappearing.

Luschka (*Virchow's Archiv*, vol. 1), and Sommerbrodt (*Ibid.*, vol. li), have each described cases of pharyngeal papilloma, while Mackenzie (*Diseases of the Throat and Nose*, vol i) refers to several cases varying in size from a pea to a small grape. This author also refers to two preparations of pedunculated tumors removed during life, now in the museum of the Royal College of Surgeons.

(c) Chondroma of epiglottis.

I will merely refer to this case, as I recorded a full account of it, with the bibliography to date, in the *Amer. Jour. of the Med. Sciences*, April, 1879. The patient was a stock-raiser, æt. 44. A tumor was found occupying the left margin of the epiglottis, extending about 3 lines into the substance of the normal tissue, which caused difficulty in swallowing and some pain. It was easily removed by rectangular cutting forceps, and the margin rapidly healed. The growth was a chondroma directly connected with the epiglottic cartilage.

II. A new procedure in the treatment of cystic goitre.

During the past year several cases of cystic goitre have been treated by what I believe to be a less objectionable method than the usual one of injecting the sac after evacuation by a solution of iodine or iron. I will give but one history, though the result has been good in all. A gentleman having a large cyst of the thyroid gland consulted me early last spring. The growth greatly interfered with his comfort, the trachea being pushed to the left in a marked degree. He objected to the usual plan of injection, as I told him it would probably necessitate his being confined to his room for some days. The fluid was drawn off by means of a small trocar and canula, and 6 inches of catgut steeped in tr. iodine inserted through a canula, which was then withdrawn, leaving a little of the foreign body projecting. As soon as there were symptoms of local inflammation evident the catgut was withdrawn. There was no annoyance from the treatment, and no return of the cyst.

2830 Locust Street, St. Louis.

A NEW METHOD OF TREATING ABSCESES—EVACUATION; THOROUGH SOLUTION OF THE ADHERING PUS; DISINFECTION; DISTENSION AND COMPRESSION.

Read in the Section of Obstetrics and Diseases of Women, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY WM. C. WILE, A.M., M.D.,
OF DANBURY, CONN.

EX-VICE-PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION;
MEMBER OF THE BRITISH MEDICAL ASSOCIATION.

The proper treatment of an abscess, of any size, character or location, has long claimed the attention of the surgeon, and the literature on the subject is almost as prolix as that of infant feeding. Various methods have from time to time been devised and given out to the profession, some of which have produced valuable and permanent results, but nearly if not quite all have the objection that, in order to carry procedure out, the knife must be used to a greater or less extent. This is not only a source of dread to the patient, but involves also considerable suffering, the solution of continuity of the tissues, tardy repair, accompanied with the attendant danger of sepsis from the exposure of the pus carried to the air.

In the last ten years I have had a great number of these phlegmons to treat, and I have tried all the known methods of procedure, with varying success; but at no time have I been entirely satisfied with the results obtained. For the last year I have been using the method described below, with the most satisfactory and unvarying results, in all classes of abscesses not multiple, and not situated in any of the great cavities of the body.

As soon as I am satisfied that pus has formed, I plunge into the cavity a large-size aspirating

needle, and attach to it an Allen Surgical Pump, such as I show you, and by turning the crank, remove all that is possible of the contents of the sac. I then take a 20 volume solution of perox-



ide of hydrogen. To this I add an equal volume of water and, by reversing the motion of the handle of the pump, without withdrawing the needle, I inject the cavity till it is moderately distended only. Almost immediately I find that the distension becomes greater and greater until I am satisfied that the medicament has reached every nook and corner. Then I simply turn the pressure off from the rolls of the instrument at the back of the pump, the accumulated gas which has been given off rushes out through the tube, carrying with it a considerable quantity of *débris*. I tighten the rolls again and, continuing the motion of the instrument in the same direction, I extract every particle that is left, and repeat the procedure as before. At the second washing with the peroxide I notice that I do not get nearly so much distension, and when the screw at the back is loosened for the second time but little of the gas and fluid comes away. After this comes off I am sure that I have a perfectly clean cavity. Now I take a solution of bichloride, 1 to 2,500, and again inject and withdraw two or three times. I am confident that I have a perfect aseptic cavity. At this stage the needle is removed, and I place over the whole integument overlying the abscess a smooth, even pad of iodoform gauze. I bind it firmly and neatly in place by an abundance of bichloride gauze bandage.

This dressing I invariably leave in place from four to ten days, when I always find complete closure of the cavity, perfect adhesion of its walls, and not a trace of the abscess left. The patients are simply delighted that no knife is used,

and but very little pain produced, no after-dressings required, no salves, solutions or ointments, no washings or daily dressings; a simple, almost painless procedure, with a rapid cure and no cicatrix. I do not believe there is to-day any other mode of procedure in this particular class of affections that will produce such satisfactory results for the same amount of outlay of skill and time.

In the many cases which I have operated upon I have never seen a single untoward effect, though I have treated nearly one hundred abscesses of one kind or another in this manner, nor do I believe that there is another instrument made which can do this work so easily and well as the little one before you. Its operation is perfect, its exhaustion complete, and by a single reversal of the direction of the crank it will either inject or exhaust without turning a stopcock, or making a single extra movement; in fact, I do not know of any single instrument that will do so many things so perfectly and with such little effort on the part of the operator, and costing so little money, as the Allen Surgical Pump. The one that you see I purchased from Chas. Truax & Co.

MEDICAL PROGRESS.

ESTIMATION OF GLUCOSE IN URINE.—DR. WALTER MENDELSON calls attention to a method of using Fehling's quantitative determination for glucose in urine, which effects a saving of fully one half the time usually required. Every one who has critically examined many specimens with Fehling's solution will have noticed two striking facts. The first of these is that some urines from which sugar can by various tests be positively excluded will decolorize the solution, and even give it an orange or opalescent-green tint. The second is that urines known to contain sugar fail to produce a characteristic precipitate with Fehling's test, giving instead appearances identical with those just described, or filling the test-tube with a precipitate usually of a yellowish-green color, which never turns red and never satisfactorily settles to the bottom, and which is, moreover, so fine as to pass through most filters. The reason for these disturbing variations from the classical action of the test, is to be found in the fact that urine contains normally two classes of bodies, one of which has the power of reducing copper oxide, and the other of redissolving such oxide when from any cause it has been reduced. The less sugar the specimen contains, the more disturbing these variations become, and it may happen that as much as one-half of 1 per cent. of sugar is present without a characteristic precipitate being formed. Concentrated high-colored urines are, as a rule, more apt to show these peculiarities

than dilute, pale urines. Two kinds of error are consequently likely: One that traces of sugar may be overlooked, the other that traces may be reported in urines containing none. The non-appearance of the red oxide and its replacement by a greenish-yellow precipitate, which persists in remaining in suspension for an indefinite length of time in the contents of the flask, are common sources of vexation to any one whose time is precious. To avoid these difficulties, the following procedures should be employed:

First, use a flask capable of containing about 250 c.c. after adding the usual 10 c.c. of Fehling's solution, fill half full of water, or till the solution is of a very pale blue. The reaction takes place much better and can be more closely observed than when the test solution is used in concentrated form. Secondly, the urine should be well diluted. Make a preliminary qualitative test to judge approximately of the quantity of glucose present and dilute accordingly. One in ten is a convenient strength. This, together with the thinning of the Fehling's solution, will insure proper dilution of the normal reducing and dissolving substances of the urine, and minimize their disturbing action. The temptation to use the urine but slightly diluted or of full strength when the amount of sugar is small, so as to shorten the time necessary in using the burette, is very great, but will always be regretted if yielded to.

Put the diluted Fehling's solution on to boil while preparing the dilution of urine and filling the burette. Then, when all is ready, in starting the process, allow only a small quantity—from one-half to one c.c.—to flow from the burette before boiling again, removing the flame and allowing the ebullition to cease each time before adding more. *Boil hard* each time, as this causes the particles of oxide to cohere and fall to the bottom more quickly than otherwise. Even under the most favorable circumstances—that is, when a red precipitate appears at once and falls quickly to the bottom as the reaction nears completion—a considerable time must always elapse before the supernatant fluid is sufficiently clear to allow the analyst to determine whether all the blue color has been discharged or not, especially as the fine particles of red oxide, when in suspension, give to an otherwise colorless fluid a violet shimmer. This settling may be hastened by adding a dash of cold water to the contents of the flask; but Munk¹ has devised a method which is probably the greatest improvement in the use of Fehling's solution since the test was first proposed.

This consists in adding a small quantity of a solution of calcium chloride to the mixture in the flask. (Munk recommends three to five drops of a 15 per cent. solution, but in practice I simply

¹J. Munk, Virchow's "Archiv," vol. cv (1886), p. 63. I have made an abstract of this article, which may be found in the "American Journal of the Medical Sciences" for October, 1886, p. 543.

make a pretty strong solution, and use as much as seems needed.) A voluminous, white, curdy, precipitate is formed, consisting in part of calcium hydroxide and in part of calcium tartrate, the latter being less soluble in hot than in cold solutions. This precipitate, from its curdy, gelatinous nature, carries down with it the impalpably fine powder of the copper oxide; and quickly leaves a clear supernatant fluid in which the most delicate shade of blue is discernible, if present. In practice I have found the following the best mode of procedure:

If the oxide comes down red in the beginning, I continue adding from the burette until the rapid falling of the precipitate to the bottom of the flask warns that the reaction is nearly complete. I then add about ten drops—or enough to give a pretty large quantity of precipitate—of the calcium-chloride solution. When the precipitate of copper is yellowish-green and shows no sign of turning red, I add the calcium-chloride solution as soon as I have satisfied myself of the latter fact. Great care must be used to boil slowly at first, leaving the flame of the burner to play gently, with frequent removals, about the bottom of the flask until the whole mass gradually boils.

If this is not done, owing to the character of the precipitate, explosive boiling may occur, and the whole contents of the flask be suddenly landed on the ceiling—a monument to precipitancy for all time! When boiling is once under way there is no more danger of such an accident occurring, and ebullition should be maintained for some minutes before the precipitate is allowed to settle. Should it be found, after the calcium tartrate with the copper oxide have settled to the bottom, that considerable copper still remains in solution to be precipitated, it will generally be necessary to add from time to time, as the urine is run out of the burette, a few drops more of the calcium-chloride solution, as the freshly precipitated calcium tartrate has greater clarifying powers than that which has already been used. Should the amount of precipitate become finally very large, more water should be added to the flask.

By the use of this method a sugar determination may be made in twenty minutes, and several can be done together in even less time each; whereas, under the common method, half an hour would be very short and very exceptional, and an hour or more—depending on the nature of the specimen—nothing unusual.—*New York Medical Journal*, July 7, 1888.

ELECTRICITY IN UTERINE DISPLACEMENTS.—In an article on this subject DR. A. LAPHORN SMITH, of Montreal, writes of the details of this method as follows:

First of all a precaution is very necessary, but not more so in this than, in the light of present experience, is the case in any other manipulation

about the genital canal, viz., to irrigate the vagina with a 1:40 carbolic or a 1:5,000 sublimate solution. If the latter be used as the disinfectant, I would recommend the operator to imitate a little knack, which Apostoli has, of depressing the perineum with the little finger afterwards, in order to empty the seminal lake or cavity of the vagina, which I have frequently known to hold several ounces of fluid. The observance of this precaution has saved me from any fear of mercurial poisoning, although I have made many hundred irrigations.

The apparatus required is as follows: a faradic coil made on purpose for this work. The wire must be very short and very thick, because what we want is a current of quantity. A long fine wire holds back the electric current, owing to friction or resistance, and consequently furnishes a current of tension, which is the current par excellence for relieving pain. A faradic coil, therefore, which is neither long nor short, neither coarse nor fine, is quite unsuitable for treating displacements. The instrument used by Apostoli, manufactured by GaiFFE, contains two such bobbins which can be used at will with the same primary coil, which latter, he never uses. These boxes also contain two small bisulphate of mercury cells, which are strong enough for an odd case that you may see at her house, but which is altogether too weak for office or hospital work where it is better to use two or three Leclanché cells to be reserved for this purpose only. With regard to the number of interruptions, the less rapidly they succeed each other the better, for we should aim at giving the muscular fibres time to relax after each contraction, rather than to throw them into a condition of permanent spasm. Every time a muscle contracts it develops, but if the contraction continues too long without a rest, it becomes exhausted.

Besides the apparatus for generating the proper current, the only other instrument necessary is the electrode or exciter. Tripier was in the habit of employing a monopolar exciter, the circuit being closed on the belly, above the pubis, by two large tampons of gas-retort carbon, covered with wet chamois skin. Apostoli uses a bipolar exciter, either large for the vagina or thin for the uterus, in which the two poles terminate about an inch from each other at the end of the instrument, and for which he claims the following advantages:

1. Doing away with the cutaneous pole.
2. Concentrating on the uterus (and its ligaments) the whole of the electrical action.
3. The operation is easier, and does not require the assistance of the patient nor any one else to hold the tampons.
4. The operation is less painful on account of the current not passing through the skin.
5. The operation is stronger and more effective, on account of the possible increase of the uterine

contractility, the facility being given of employing, although with less pain, a much stronger current, with the result that it is more curative.

I have just said that the bipolar exciter may be either vaginal or intra-uterine, and it may very properly be asked in what cases would you use the one, and in what cases the other.

The answer naturally follows from what I have already said as to the nature of the uterine displacements. In flexions, or as I would prefer to call them, deformities, the uterus itself is relaxed, and requires to be put through a course of gymnastics in order to make it hold itself up on itself, and the intra-uterine exciter should be employed. In versions and prolapsus, the muscles of the perineum, vagina, and the so-called ligaments are at fault, and they can be made to contract merely by the application of the current to the vagina. Patients generally describe their sensation as a trembling in their inside, at first immediately around the exciter, but afterwards gradually spreading until the whole pelvis is included. This is effected by the tissues acting as induction coils, one layer being affected after the other. This reminds me of another precaution which it is well to bear in mind. If by any chance the current should suddenly cease to flow, or the instrument should drop out, the patient will experience a severe shock, due to the discharge of the induced electricity stored up in these secondary batteries. It is therefore, important to lower the strength of the current gradually, before terminating a séance, and to take good care not to let the electrode inadvertently drop out. If you do, you will not be likely to have a chance of doing it again on that particular patient.

The question may be very properly asked, whether the faradic treatment of displacements will ever fail us; and if so, in what cases. It is insufficient in those cases in which the displacement is due to abnormal weight of the uterus, when the weight consists of tissues other than muscle. For instance, in cases of areolar hyperplasia, in which there is an abnormal amount of fibrous tissue, the faradic current would be of no use, because there is no muscular fibre for it to exert its power upon. In these cases, what is wanted is a form of electricity which acts especially upon the trophic nerves; in other words, the continuous current. But in subinvolution, in which the overweight is entirely due to the presence of muscular tissue which should have undergone fatty degeneration and been absorbed, the interrupted current finds its most useful application. For here all that is required is a greater amount of contraction, in order to diminish the blood supply.

Another question which is often asked is: Is it important to employ one pole rather than another in the faradic current? The answer is no; for the direction of the current changes many

hundred times a minute, so that no matter how you connect the current, the effect will be the same. Moreover the two poles terminate in the same electrode.

Should we use a galvanometer while applying the faradic current? No. For the quantity of electricity, which alone the galvanometer is capable of revealing, would hardly be sufficient to deflect the needle.

How then can we judge of the amount of current to employ? Simply by consulting the feelings of the patient. Never give her more than she can bear.—*American Journal of Obstetrics*, June, 1888.

TUMOR OF THE SPINAL CORD; REMOVAL; RECOVERY.—We are slow in getting used to the idea that under proper conditions of precaution many tumors of the brain may be removed *en masse* with the gain of life, and not the losing of it; and now, further, we must grant that the spinal cord, that most inaccessible and inviolable of organs, may be laid bare of part of its bony covering—man may become for the time and in part an invertebrate—in order that it may be set right, not by the gentlest of manipulations, but by the surgeon's knife. At the concluding meeting of the Royal Medical and Chirurgical Society, which was held on Tuesday, June 12th, the most important paper of this session, from Dr. Gowers and Mr. Victor Horsley, was presented, relating in such detail as the novelty and complexity of the facts demanded a unique case of the successful removal of a tumor of the spinal dura mater from within the bony canal, and the complete recovery of the patient. At a previous meeting of the Society the patient, a private gentleman, an officer in the Merchant Service, had most willingly attended to show to all who cared to see them the proofs of what had been done to him, and to express his deep gratitude for the change it had made in his life. Since 1884 he had had a nearly constant pain under his shoulder blade, with long fits of agony that maddened him, as some of his friends said in all seriousness, and with no hyperbole or metaphor. He might well have been glad of some last straw to break his back, and bring him to an end; but science could break his back to more profit. After due consideration and explanation, Mr. Victor Horsley laid bare the spinal column from the third to the seventh dorsal vertebra, and cut off the fourth, fifth and sixth spinal processes with strong bone-forceps. He made his way through the laminae on both sides, and the still more obstinate ligaments subflava, slit the dura mater up the middle line, and laid bare the spinal cord. When the opening was first made the injury had been suspected, but the tissues were healthy. That the attempt should be abandoned was counselled from some quarters, but Mr. Horsley preferred to complete his task, removed

the posterior part of another superior vertebra, and there found this tumor of the dura mater compressing the cord. It could easily be shelled out of its deep bed, the wound was carefully closed and drained, and healed by first intention. Slowly the great power of nervous recovery showed itself, and the pain and paralysis disappeared. This is not easy surgery; and the many details, hints, and conclusions that find a place in Mr. Horsley's paper will need careful consideration when we receive it at length in print. It was more than a summer gathering of the Royal Medical and Chirurgical Society could do to discuss it; it must be left to take its permanent place among the forward steps of the progress of the healing art.—*British Medical Journal*, June 16, 1888.

LAXATIVES FOR FATTY HEART.—KISCH recommends the following;

R Pulv. rad. rhei.,
Ext. aloes,
Ext. jalap, ãã gram. 2
Pil. mass, q. s.

Make 30 pills.

S. One pill in the evening.

For anæmic patients:

R Ferri sulph. pur. - - - grams 3
Ext. aloes - - - - - " 2
Pil. mass. - - - - - q. s.

Make 30 pills.

S. One, morning and night.

If compensation is becoming exhausted digitalis may be added.

R Pulv. rad. rhei.,
Ext. aloes aq.,
Pulv. fol. digital. ãã grams 2
Pil. mass. q. s.

Make 30 pills.

S. One every 3 hours.

—*Internat. klin. Rundschau*, No. 10, 1888.

TREATMENT OF LUXATED CATARACT.—At the recent meeting of the Société Française d'Ophthalmologie GALEZOWSKI read an article on this subject, and drew the following conclusions:

1. Subluxated and luxated cataracts constitute a variety of complicated cataracts, and should be operated upon with the least possible delay, in order to prevent inflammatory accidents.

2. The best operative method for the extraction of luxated cataracts is the method with the simple flap, without iridectomy.

3. The incision should be made above, preferably, of medium size, and away from the corneal border.

4. The curette with which the luxated crystalline is removed should be comparatively large and concave in order to better seize a large cataract.—*Revue Générale d'Ophthalmologie*, No. 5, 1888.

HYPERPLASTIC CATARRH OF THE VOCAL CORDS.—At the meeting of the Berlin Medical Society on June 13, HEIMANN presented a woman suffering from this affection, especially at the anterior angle formed by the vocal cords. It was similar to the affection described by Stoerck under the name of blenorragia. The patient was completely aphonic. The nasal and palatine mucous membrane was atrophied. The anatomical alterations of this singular affection, said Heimann, are of the order of the laryngeal pachydermia described by Virchow.—*Bulletin Médical*, June 20, 1888.

AMYLEN HYDRATE AS A HYPNOTIC.—DR. GÜRTLER, of Königsberg (*Berliner klin. Wochenschrift*, No. 6, 1888), gives the results of its use in cases of alcoholism, epilepsy, morphinism, cerebral meningitis, spasmodic cough, cystitis, and other maladies. In these and other diseases he has found it act promptly and efficiently as an hypnotic.

The formulæ advised by Gürtler are as follows:

Amylen hydrat.	- - - - -	7 parts.
Aquæ destil.	- - - - -	40 "
Syrp. rubi	- - - - -	30 "

or,

Amylen hydrat.	- - - - -	7 parts.
Aquæ menth. pip.	- - - - -	40 "
Syrp. rubi	- - - - -	30 "
Ol. menth. pip.	- - - - -	gtt. i

Dose.—45 to 90 grains of amylen hydrate for an adult.

—*American Jour. Med. Sciences*, May, 1888.

ARTIFICIAL SUPPRESSION OF THE MENSES IN CHLOROSIS.—LÖWENTHAL records 23 cases in which artificial suppression of menstruation was of therapeutic advantage. The method consists in the injection of warm water (at not less than 49° C.), the patient remaining in bed. In a very few cases ice-water may be preferable. In 18 of Löwenthal's cases the patients had chlorosis; the other 5 included 2 cases of grave hysteria, and 3 of convalescence from exhausting diseases. In the last convalescence was cut short. The results of the treatment were satisfactory.—*Gazette de Gynécologie*, June 1, 1888.

ACTION OF VAPORS OF HYDROFLUORIC ACID ON TUBERCLE BACILLI.—GRANCHER and CHAUTARD conclude, from a series of experiments that (1) the action of vapors of hydrofluoric acid on the evolution of experimental tuberculosis is *nil*, (2) that the direct prolonged action of hydrofluoric acid on the tubercle bacillus diminishes its action, but does not kill it.

APOMORPHINE IN ACONITE AND BELLADONNA POISONING.—DR. BRADLEY reports, in the *British Med. Journal*, a case of poisoning by aconite and belladonna, in which 0.1 gr. of apomorphine was injected hypodermatically about ten minutes after the accident. Ether was injected to stimulate the heart. The patient recovered.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JULY 21, 1888.

THE ACTION OF DIGITALIS.

"The indications for digitalis in cardiac affections are not yet precisely laid down," said Fonsagrives in 1884, "and we must proceed by groping, advancing step by step, observing the effects produced." Another French clinician has said that digitalis is like an ink-bottle, though how, he did not say. "With it we may calm or provoke palpitations, we may cure or promote asystolism, we may produce cerebral hæmorrhages or embolism, we may provoke anginous attacks or increase their intensity; here it is a perfect diuretic, there it has no action on the urinary excretion," says HUCHARD, in a most valuable addition to the therapeutic literature of internal medicine, "*Quand et Comment doit-on prescrire la Digitale.*"

But before answering the questions, When and how shall we prescribe digitalis? it may be well to review briefly the physiological and therapeutic action of digitalis. That there is by no means a unanimity of opinion may be seen by the four theories as to the action of this drug: 1. Digitalis acts directly on the myocardium (Vulpian), by exciting it (Sanders), or by paralyzing it (Stammius, Orfila, Dybkowski, Pelikan). 2. It acts on the vessels and vaso-motor nerves (Hutchinson, Löderich, Legroux)—a theory that makes the primary action of the drug peripheral rather than central. 3. It acts on the nervous system. Traube is the chief supporter of this view, his third and last opinion being that the

slowing of the heart is not due solely to the action of digitalis on the trunk of the vagus, since after section of this nerve it does not retard the pulse. It must be admitted, then, that it acts on its peripheral end. 4. Digitalis acts at the same time on the heart and on the vessels.

The diverse opinions regarding the action of digitalis, says Huchard, are due to the fact that digitalis acts differently according to the species of animal experimented upon. Given to cold-blooded animals it arrests the heart in systole; while it arrests the heart in diastole in warm-blooded animals. Its maximum action is seen in frog, rabbit, and guinea-pig, and its minimum action in the snail and toad. We cannot draw conclusions from such contradictory results from the sound or traumatised animal to the sick human patient; nor can we conclude from the well man to the sick man, from a patient in a febrile condition to one without fever, or from a cardiopathy in its first stage to one that has become asystolic. All diseases, and particularly febrile diseases, change the conditions of absorption and elimination of medicines, and the doses prescribed, says Huchard, should be regulated and modified accordingly. If we give digitalis to a man with no cardiac affection, or to a patient with heart disease completely compensated, it is very difficult, even with large doses, to slow the heart's action or to cause diuresis. If we give it to an asystolic patient we cause rapidly and surely, with comparatively small doses, a considerable slowing of the pulse and increased excretion of urine. If we wish to act on the heart of a febrile patient and abate the temperature, we must use large doses of digitalis. In typhoid patients, for example, the necessity of increasing the dose in many cases is a proof of the slowness of absorption and elimination of drugs under certain circumstances. And what better proof can we have, asks the learned clinician, of the uselessness and danger of certain formulæ that indicate the invariable doses of drugs, without mentioning the variable conditions of absorption and elimination?

It has been said that digitalis acts differently in the first and third stages of a cardiopathy. Given a case of aortic disease in which the lesion is well compensated, or in which there is exaggerated compensation: here it is wrong to give digitalis, for even if the heart is slowed very

slightly, the diuresis produced is insignificant, and the heart may be excited instead of being calmed. But take this same patient in the hypsystolic stage, and the drug that has produced no therapeutic results three or four months previously, now causes abundant increase of urine, and slowing, reinforcement and regulation of the heart-beats. In the first stage digitalis has possibly excited the heart; in the second it calms it. So the dictum of Bouillaud, that digitalis is the opium of the heart, or of Beau, that it is the quinine of the heart, is not absolutely true. The most that we can say is that it is a regulator of the whole circulatory system. The difference in the action of digitalis depends, on the other hand, a good deal on the dose employed. Even in the last century Withering said that it acts better in cases in which the pulse was feeble and intermittent than in those in which it was hard and regular; but he did not discern that while it is a sedative in large doses, it acts as a stimulant in small doses. We have thus a further proof that clinical physiology is superior to experimental physiology. It is clinical physiology that shows us that digitalis causes slowing, regulation, and reënfacement of the ventricular systole, and increased arterial contractility and tension. In pathological cases it becomes diuretic in an indirect way, and without exercising a primary action on the kidney. That it is absorbed and eliminated slowly its cumulative action shows.

The first phenomenon produced by digitalis is slowing of the cardiac beats, rarely preceded by acceleration. The heart may be excited by any motion, by emotion, by cough, but this is succeeded by slowing of the pulse when the patient becomes quiet. The digitalic pulse, then, is, says Huchard, mobile, variable, and unstable; whence the therapeutic rule, little known and less observed, *keep the patient quiet and at rest if you would get the maximum action of digitalis*. As already said, when digitalis is given to a well person or to one that has no cardiopathy, the slowing of the pulse is scarcely appreciable; but when given to an asystolic cardiopath the slowing is much greater, and in some cases the pulse may fall from 160 to 50 beats a minute. It should be remembered, however, that digitalis may make the pulse *appear* slow, while the heart is really not so slow. In estimating the action of the drug, therefore, the heart should be auscultated

while the pulse is palpated. Sometimes there are twice as many cardiac pulsations as beats of the radial pulse, showing the alternation of a strong and a weak systole, as may be seen by sphygmographic tracings.

Not only is the pulse slowed, but it is also regulated. Nevertheless, Lorain has shown that digitalis produces a sort of regular or rhythmical irregularity, by which two rapid pulsations are separated from the two following by a long pause. This is the bigeminal pulse of digitalis, which should not be attributed to the patient's malady. The pulse becomes stronger, fuller, more ample, more resistant under the finger, indicating increased arterial tension, shown on the sphygmographic tracing by a short and oblique line of ascension, with a rounded summit, and a long line of descent. The cardiac impulse is more energetic, and the præcordial impulse more limited and stronger—the hammer stroke. The first sound is more vibrating, sometimes followed by a transitory systolic souffle, which has been attributed to the irregular contraction of the papillary muscles. This digitalic souffle, however, should not be confounded with that of mitral insufficiency, which has disappeared under the influence of the progressive enfeeblement of the myocardium, and reappeared under the tonic action of the drug. At the same time and for the same reason the asystolic murmur of Parrot disappears from the tricuspid orifice, this murmur being due to functional insufficiency following parietic dilatation of the right ventricle. That the drug is having its effect is shown by repeated and successive measurements of the heart; the heart retreats, diminishes in volume, especially transversely in asystolies, which implies diminution of the auriculo-ventricular orifice.

Diuresis is the second phenomenon following slowing of the pulse; and digitalic diuresis has special characteristics: it appears on the second or third day after the beginning of the administration of the drug, and usually appears suddenly; it is like a urinary flood, which is maintained for eight or twelve days above the physiological quantity. Digitalic diuresis is distinguished from the diuresis caused by caffeine and strophanthus in that the latter drugs cause a progressive and continuous increase of urine. We all know that when diuresis appears there is diminution or disappearance of cedema, dropsy and congestion, and

the body loses in weight. According to Lorain the daily elimination of urea does not vary, whatever may be the quantity of urine excreted under the action of digitalis; Huchard says that it is increased, while Mégevand says that the urea is diminished.

It is scarcely necessary to remind the reader of the cumulative action of digitalis, or of the therapeutic rule: Digitalis should be prescribed in decreasing doses, and it should not be administered in large doses for more than four or five days. But with the cumulative action of the drug must be considered the accumulation of doses. As Gubler has said, digitalis does not penetrate immediately into the organs that it modifies; it may be held in reserve in the organism; its cumulative action is the storing of the drug in an organ (the stomach or intestine), the accumulation of dose is the storing of it in the organism. From this must be deduced the practical conclusion that drugs that have cumulative properties should be given, so far as possible, in liquid form.

To the ignoring of the facts mentioned must be attributed the greater number of failures with digitalis, and the majority of cases of digitalism, the dangers of which have been exaggerated. It is important to reflect that these disagreeable symptoms do not appear while œdema persists. While the drug cures asystolism, it may cause a kind of toxic asystolism. Among the disagreeable effects of digitalis may be mentioned a pseudo-angina, which must be distinguished from præcordial anxiety, and from true anginous attacks in subjects of angina provoked by abuse of digitalis. The most important of these effects, however, are those produced on the digestive tract. The precocious vomiting caused by digitalis is due to the topical action of the drug on the gastric mucous membrane; the later vomiting comes on in about twenty-four or forty-eight hours after administration of digitalis in large doses, and is caused by toxic action. The accidents from digitalis may dismay the practitioner, and deprive him of one of the most important therapeutic resources. Next week we will discuss the important question, How should digitalis be prescribed?

THE SALE OF FLY-PAPERS containing poisons is forbidden in Berlin, to others than apothecaries, by order of June 7.

WEAR AND TEAR OF THE PROFESSION.

DR. JOHN H. RAUCH has recently published some statistics on this subject, collected during the last ten years. The figures go to show that the wear and tear on the medical profession is underestimated, and that the active practice of medicine is less conducive to longevity than is popularly supposed.

The statistics are based on observation in Illinois, in which, during the last ten years, there has been an average of 6,000 living per annum, and the aggregate deaths have been about 800—an annual mortality of 13.3 per 1,000. The *personnel* of the profession in Illinois is thought to be fairly representative of the profession generally, since it is composed of about one-sixth of physicians of a large city, and the remainder of physicians of smaller cities and towns.

Of the 800 deaths the age at death and the cause of death have been obtained in 686 cases. Three tables have been prepared, the first showing the average number of physicians in Illinois living annually at grouped ages, and of all males in Illinois at the same ages; average number of deaths annually of each class, 1878 to 1887, inclusive. The second table shows the yearly death-rates per 1,000 of physicians in Illinois, of all males in Illinois, and of both sexes in the United States, at grouped ages. From an examination of the tables it is seen that, while the death-rate of physicians in Illinois for the first few years after entering the profession is lower than that of all males in Illinois, and greatly less than that of the whole population of the country; it increases beyond that of the former class during the decade from 40 to 50, and is greater than that of the latter class in the next decade. The inference to be drawn from this is that on entering the profession physicians form a selected class, since they have an advantage of almost 3 per cent. as compared with all males at the same ages—from 24 to 40—and of more than 50 per cent. as compared with the total population, both sexes, at the same ages. But as the wear and tear of practice begins to tell this advantage is soon lost, and during the four decades from 30 to 70 the mortality of physicians is 8 per cent. greater than that of all males, and during the period from 40 to 70 it is 11 per cent. greater than that of both sexes.

The third table shows the principal causes of deaths of physicians in Illinois during the ten

years ending December 31, 1887. The following are the percentages: Phthisis 15.3, diseases of the lungs and respiratory apparatus 14.4, diseases of the brain and nervous system 13.1, zymotic diseases 10, misadventure and violence 9.4, diseases of the heart and blood-vessels 8.4, diseases of the stomach and digestive tract 6, Bright's disease 3.8, diseases of the liver and appendages 3.2, and enteric fever 3 per cent. These figures show the result of exposure, irregular hours, broken rest and mental anxiety. Phthisis, diseases of the respiratory apparatus (91 deaths from pneumonia), and Bright's disease caused 268 deaths—more than 25 per cent. of the total. It is seen that more than 13 per cent. died of diseases of the brain and nervous system (embracing 43 cases of the various forms of paralysis) as a result of mental strain and anxiety, insufficient, irregular, and interrupted sleep and similar causes. The group of zymotic diseases includes 5 deaths from diphtheria, 1 each from small-pox and yellow fever, and 8 from septic infection, contracted while in attendance upon patients.

There is a marked decrease during late years of the deaths from alcoholism, overdoses of opiates and narcotics, and suicide, possibly due to an amelioration of the conditions of life—better roads, better means of locomotion, increased comfort in living, and less strain upon the practitioner, particularly upon the country doctor. During the last ten years 12 deaths are reported as due to alcoholism, but 11 of these occurred during the first six years of the decade; of the 18 deaths from "overdoses of opiates and hypnotics" in the whole period, there has been but one during the past three years.

THE DEBATE ON ELECTROLYSIS.

On June 21st there was a very lively debate on "Electrolysis in the Treatment of Diseases of Women," in the Obstetrical Society of London, following the reading of papers by Drs. Steavenson, Lovell Drage, Gibbons and Shaw.

Dr. Steavenson would not admit, with some, that the electrolytic action of electricity was limited to its cauterizing properties, but advocated a more extensive use of electrolysis in those diseases of women in which caustics are more usually employed. While the apparatus was cumbersome, and its management difficult, to

those that could manage the apparatus electrolysis would prove a more efficient and elegant way of applying caustic than any other method. He maintained that this caustic action was true electrolytic action. Electrolysis, he said, certainly takes place at the poles, and he believes that it also takes place between the poles, in the substance of a tumor, for example. In regard to the use of electrolysis in erosions and catarrh, he had evidence to show that it is really a shorter method of cure than any other, and is a better local remedy than any caustic. So, also, urethral caruncle, he believed, is best treated by electrolysis, with cauterization of the raw surface left after removal of the growth. In order to be successful with the method the operator should be both a gynecologist and an electrician.

Dr. Steavenson claimed that not only will cicatricial tissue out of sight in the pelvic cavity disappear under electrolysis, but cicatrices at the meatus of the urethra also, and on the brawny tissue around old perineal and scrotal fistulæ.

Drs. Bantock and John Williams could not express themselves in favor of electrolysis, and the latter thought that "there might be a place for the employment of electricity in the treatment of diseases of women, but as yet no case had been made out for it." Dr. Champneys thought the discussion of the subject premature, and he was not convinced by any of the cases reported in the papers read. Dr. Galabin thought that as a caustic, electricity was valuable when the interior of the uterus required treatment and the cervix was narrow; in other respects it was scarcely superior to other caustic agents.

Dr. Playfair declared that they that had really mastered the technical details of electrolysis had never found the method useless. From personal experience he had sufficient evidence to satisfy himself that the agent had great power, but that much was yet to be learned. It might do harm if injuriously and unskillfully used, but that truth furnished no argument for rejecting electrolysis as a therapeutic agent, but rather demonstrated that the effects of the new method must be carefully studied, and its dangers detected and avoided. Dr. Inglis Parsons believed that electrolysis would prove successful in hæmorrhagic cases whenever the electrode could be made to touch the whole of the bleeding surface. Dr. Routh compared the opposition to the electrical

treatment of diseases of women to the similar opposition to the sound and to ovariectomy in past days. They that have no experience with the method cannot judge of its merits. Dr. Heywood Smith believed that electrolysis was of value in promoting the absorption of inflammatory deposits in the pelvis after the stage of active inflammation had passed away. The method should be systematically tried, in intractable cases of obscure pelvic pain.

Dr. Gibbons, while insisting that electrolysis as a means of curing fibroids deserves more trial, and will be better, if successful, than oöphorectomy or hysterectomy, said that the method gave promise in other directions; it should be carefully applied in obstinate, intractable affections like chronic metritis.

Dr. Shaw had satisfied himself by a series of experiments that electrolysis takes place between as well as at the poles. Some of the cases of failure, he says, are due to local irritation, the result of a too early or too vigorous use of the hæmostatic action of the positive pole. A preliminary or occasional resort to the derivative action of the negative pole seems to be advisable.

"SPECIALTY" ADVERTISING.

"Under the fostering care of the ethical rules of the American Medical Association," says the *Medical Record*, "there is growing in the West a practice of physicians advertising themselves as specialists in the medical journals." We have no means of knowing whether the specialists referred to are members of the American Medical Association or not. If there be anything in the ethics of the Association that would "foster" such advertising on the part of Western physicians, it would have the same effect on the physicians of the East; and our Eastern confrères will be slow to acknowledge that the Western members of the profession are ahead of them in anything. And if there be anything in the ethical rules of the Association that "fosters" such advertising, no one need fear that the Editor of the *Medical Record* would hesitate to point it out.

It may be said, however, that under the fostering care of no ethics of any kind, a surgeon of New York, who was connected with the case of the late Gen. Grant, and who has considerable connection with the *Medical Record*, manages to

have himself interviewed rather frequently by newspaper reporters, the interviews being telegraphed through the country as "specials," or sent out by the news agencies. Some months ago (early in December, 1887), this surgeon was interviewed on Scheurlin's bacillus of cancer, the interview being sent to the Chicago *Times* through Ford's News Agency, of New York, and being opened with the information that the surgeon in question was a high authority on cancer—the proof of "high authority" resting on his connection with the case of Gen. Grant. Since that time interviews with this surgeon on the case of the late Emperor Frederick III. have been published in the Chicago papers, and at the time of the meeting of the Association a Cincinnati paper contained a telegraphed item, the result of an interview, stating that this surgeon had been called by cable to attend the Emperor Frederick of Germany. Inasmuch as he did not go, however, the probability of the truth of the statement is so small as to be microscopic. In these interviews this surgeon has been frequently mentioned as "an authority on cancer." If one must advertise, is it not better to advertise in medical journals than in the daily newspaper? While unprofessional advertising in medical journals is to be deplored and discountenanced, it must be remembered that only a few are so fortunate as to count reporters and interviewers among their friends; a species of good fortune that may be due in some cases to the fact that the much-interviewed medical man has at some time forcibly injected himself and his services into the case of a sick man with a National reputation.

The ability to be interviewed is frequently more than a capacity—in some cases it seems to amount to an intellectual faculty. Whether this faculty, like the poet, *nascitur, non fit*, we will not pretend to say. But it is certain that some really great men are wanting in this faculty. For example, we do not remember that we have ever seen anything that would go to show that the consultants in the case of President Garfield attempted to make capital out of their connection with that celebrated case; nor have we ever heard such a thing intimated. We do know that Dr. Agnew incurred the dislike of many a newspaper man because he resolutely refused to be interviewed. We see, therefore, that while all men in this country have

equality conferred upon them by the Constitution of the United States, Nature decrees that there shall be differences in individuals.

It is still unsafe for a person living in a glass house to throw stones.

EDITORIAL NOTES.

DR. GEORGE VON ADELMAN, the well-known Professor of Berlin, is dead.

DR. FRIEDRICH WILHELM HAGEN, Director of the Lunatic Asylum at Erlangen is dead.

DR. ADAMKIEWICZ, of Cracow, has received a silver medal from a Society in Amsterdam for his researches on peptone.

PROFESSOR VIRCHOW has been awarded the gold Boerhaave Medal for Anthropology by the Scientific Society of Haarlem.

VON BERGMANN exhibited at the late Congress of Surgeons a patient whose intestine he resected four years ago for carcinoma.

A NEW POISON BOTTLE, shaped like a coffin, and made of blue glass is the invention of Mr. O. C. Holt, of Manchester, England.

AN INTERNATIONAL PHYSIOLOGICAL CONGRESS will be held in Paris next year, under the auspices of the Société de Biologie, and under the Presidency of Brown-Séquard.

THEOPHYLLIN, a new alkaloid of tea, is the recent discovery of Professor Kossel, of Berlin. It has the composition $C_7H_8N_4O_2$, is isomeric with theobromin and with paraxanthin, but differs from these substances by its reactions. When a methyl group is introduced into theophyllin the latter is converted into caffein, and as E. Fischer has proved this to be a trimethylxanthin, theophyllin is evidently a dimethylxanthin. Physiological experiments with theophyllin will be made.

PARTHENICINE, an anti-neuralgic and antiperiodic, it is claimed, is described by DR. CARLOS J. ULRICI, of Cuba. It is obtained from *Parthenium hysterophorus*, of the Syanthorous division of the compositæ. The alkaloid occurs in large rectangular prisms, with four sides terminating in pyramids, has no smell, a bitter taste, is slightly soluble in boiling water, alcohol, ether, and chloroform, and gives a characteristic green color with sulphuric acid and potassium bichromate.

THE SOUTH AMERICAN SANITARY CONGRESS, which recently met at Lima, was held for the object of establishing an international sanitary system among the South American States, with a view of checking the development and spread of infectious disease, especially cholera and yellow fever, and including plague. The plan provides for intelligence offices in each country, from which information will be sent out. The time of quarantine in case of cholera is to be 8 days, and 10 days in case of yellow fever. Ports are to be closed under no circumstances.

A PAD FOR A FRACTURED CLAVICLE has been made by Mr. G. E. J. Greene, of England. It consists of an irregularly shaped crescentic pad, concave on its under surface, and grooved so as to lie easily on the clavicle. A strap is attached to both ends of the pad, one of which passes over the shoulder on the injured side to be attached to the other, which is brought out under the opposite axilla. A third strap passes down from the convex border to be buckled to a belt at the waist. This splint, it is claimed, is easily applicable, maintains fractures and dislocations in perfect apposition, without undue pressure, and ensures comfort. The patient can be dressed and go about.

CARBONIC-ACID SALINE SOLUTIONS.—M. L. JACQUEMAIRE proposes the forcing of carbonic acid into saline solutions, and bottling them like soda-water, so that they will keep without developing microphytes. A pressure of 4 or 5 atmospheres is used, the bottles being specially manufactured to resist this pressure. Of course most of the gas escapes when the bottle is opened, but carbonic acid being soluble in its own volume of water, enough gas will be retained to keep the solution clear for about a month, Jacquemaire claims, even when the bottle is opened four or five times a day. He experimented especially with solutions of lactophosphate and biphosphate of lime, pyrophosphate of ammoniicitrate of iron, peptone and pepsin. The antiseptic agents sometimes added to salt solutions are undesirable, but carbonic acid is always harmless.

BIARIUM AND DIGITALIS, as has been found by DR. A. BARY, of Dorpat, are somewhat similar in their actions on the heart. It was found that in small doses chloride of barium increases the action of the heart muscle, and in large doses sets

up peristaltic movements, finally arresting the heart in systole, this arrest being a tetanic spasm of the cardiac muscle, being brought to an end by muscle-paralyzing agents and by mechanical distension by fluid pressure, but by neither electricity nor by atropin. Arrest of the heart caused by muscarin and chloral ceases under use of barium chloride. In small doses barium slows the pulse of warm-blooded animals independently of the inhibitory apparatus. In large doses it first accelerates the pulse (by stimulating the accelerating nerve?), and then slows it, by causing cardiac weakness. It generally increases the blood-pressure. It increases the secretion of the saliva, when injected into the veins, this secretion being checked by atropin. In this respect its action differs from that of physostigmin, though in other respects their actions are somewhat similar.

ALBUMINURIA IN THE UNITED STATES.—At the ninety-seventh annual meeting of the Connecticut Medical Society, DR. G. R. SHEPHERD presented an elaborated statistical report on albuminuria, compiled from examinations made on supposed healthy men. The following general conclusions were drawn: Albuminuria is much less frequent in the United States than in England, Stewart giving 31 per cent. as the general average, while ours, conducted on a much larger scale, show but 2 per cent. 2. The brain-workers, rather than the muscle-workers, show the largest percentage of albuminuria. 3. The urine of perfectly healthy people rarely shows albumin after food, while those who suffer from albuminuria and oxaluria are very liable to show it. 4. Privation, scanty food and clothing, with insanitary surroundings, increase the liability to albuminuria. 5. Cold bathing does increase the liability to albuminuria, though more notably so in the case of dyspeptics. 6. Severe exercise increases this liability in a very moderate degree. 7. In the large majority of cases albuminuria is not associated with kidney disease. 8. In the matter of life insurance albuminuria should be looked upon as a symptom only, and acceptance or rejection of the risk should depend on the gravity of the cause. 9. The existence of any such condition as physiological albuminuria is extremely improbable.

In consideration of the sweeping character of conclusion No. 7, it should be explained what is meant by "kidney disease."

SOCIETY PROCEEDINGS.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, April 20, 1888.

THE PRESIDENT, HENRY T. BYFORD, M.D.,
IN THE CHAIR.

(Concluded from page 65.)

*Conclusion of DR. W. W. JAGGARD'S paper on
CONSERVATIVE CÆSAREAN SECTION.*

Pelvimetry.—Dr. R. P. Harris writes in a recent communication to the *Medical News*, March 31st, 1888: "What is wanted now is a better acquaintance with pelvimetry, and the steps of the improved operation, as it is performed in Leipzig, Dresden, and New York." No one doubts the truth of this proposition. The notion of pelvimetry generally entertained is obscure and confused in the extreme. Dr. E. C. Dudley informs me that a few weeks ago he encountered a case in which a wife, desirous of becoming a mother, confessed to the practice of the prevention of conception through a period of ten years, under the advice of two distinguished practitioners, upon the ground of alleged contracted pelvis. Careful measurements revealed the fact that the pelvis was unusually large. The woman has since become pregnant. Many of the cases of Cæsarean section recorded in American annals are rendered well-nigh valueless for the purposes of comparative study by the omission of accurate pelvic measurements. The exact determination of the size and form of the pelvis constitutes one of the most difficult problems in obstetrics. A survey of the enormous mass of literature upon this subject fully confirms this opinion. As an excellent critical, historical review of the subject, I beg to recommend the monograph¹ of Dr. Felix Skutsch. While all methods of pelvimetry fail to yield absolutely accurate measurements, and our notion of the pelvic anomaly in the concrete case must be inexact to a degree corresponding, still the diameters and dimensions just mentioned are amply sufficient to establish the probable diagnosis of the shape and relative size of the pelvis in the individual case of the more usual types of deformity, and to afford data for comparative study, and ground for action.

I append the corresponding normal diameters and dimensions as given by Carl Braun and Schröder:

Distance between anterior superior spinous processes	- - - -	26 cm.
Distance between iliac crests	- - - -	29 cm.
External conjugate diameter (Baudelocque)	- - - -	20½ cm.

¹"Die Beckenmessung an der lebenden Frau," Jena, Gustav Fischer, 1887. *

Distance from sacro-coccygeal joint to subpubic joint (A. G. Breisky)	-	12.3 cm.
Distance between great trochanters	-	31½ cm.
Pelvic circumference (Kiwisch)	-	90 cm.
Diagonal conjugate diameter	-	13 cm.
True conjugate diameter	-	11 cm.

II. The Relative Indication for Cæsarean Section.

—I cannot forbear to reiterate here certain convictions that must always come up for consideration in similar cases. These propositions I beg to submit, if the expression be not too harsh, not so much as matters of opinion as matters of fact.

1. The necessary maternal mortality of craniotomy, performed under the conditions demanded in Cæsarean section as respects freedom from exhaustion and infection of the patient, with the best instrument and adequate skill, in cases of the simple, flat rachitic pelvis with a *conjugata vera* of 6 to 8 cm., is zero. The simple, flat rachitic pelvis is used as a type in this thesis on account of its relatively frequent occurrence. In the generally contracted, and in the generally contracted and flat pelvis, a *conjugata vera* greater than 6 cm. must be postulated unless, as in the case I have just reported, the foetal head is uncommonly small. It has been reserved for Leopold to demonstrate the truth of this proposition. While in 215² cases of craniotomy collected from the records of the Berlin Polyclinic, the Clinic at Halle, and the Leipsic Polyclinic, the entire maternal death-rate was 5.6 per cent., the total maternity in Leopold's Clinic at Dresden during the interval, 1883-1887, after craniotomy, including 71 cases,³ was 2.8 per cent. In these two fatal cases, the cause of death was eclampsia, so that the mortality, due to the operation itself, has been reduced to zero.

The operation, performed under its own peculiar conditions, with the best instruments, is not extraordinarily difficult. It does not imply a higher degree of operative skill than it is fair to presume every qualified practitioner possesses. I have observed in all about 30 cases of craniotomy, and have never noted especial difficulty in the technique of the operation, nor unfavorable results to the mother, when the procedure was really indicated, and when the necessary conditions were present.

On the other hand, the mortality of conservative Cæsarean section, even when the necessary conditions have been supplied, is still considerable. Of Leopold's 23 cases of the improved Cæsarean section, 2 or 8.4 per cent. died. The following extract from a letter recently received from Dr. Robert P. Harris is of interest in connection with American statistics:

"Your case make 16 Säger-Cæsarean sections for the United States, with 7 recoveries; and 165 for the whole Cæsarean list, with 63 women saved.

"I have 12 cases on record for the last fifteen

months, with 6 women and 9 children saved; yours makes the thirteenth. There were 8 operations in 1887, all Säger's but one, with 4 women and 5 children saved. I have 3 cases in already for this year; one each for January, February, and March; 1 woman and 3 children saved."

The Cæsarean section is, and must always remain, the most difficult, dangerous, and formidable procedure in operative obstetrics. The shock incident to the operation, entirely apart from sepsis and the loss of blood, is an element of danger that can never be completely eliminated. It is, perhaps, needless to remark that the successful performance of this operation does imply such a high degree of operative skill, and such an experience in this particular operation, as it is fair to presume the average practitioner does not possess.

As remarked by Leopold,⁴ "The time has not yet arrived when craniotomy upon the living child can be unconditionally substituted by Cæsarean section. In a good many cases perforation may be avoided, and in a still larger proportion it cannot be dispensed with."

And Praeger⁵ draws this important conclusion, "In cases presenting the relative indication, and which in a hospital might be subjected to Cæsarean section, the general practitioner, as a rule, ought only to consider craniotomy as the operation involving least risk to the mother."

2. The consent of the patient, obtained without direct or indirect coercion, is an essential condition to the relative indication. The time will probably come when under certain circumstances—*ex. gr.* in hospital practice—the woman shall not be permitted to elect as freely as she must be allowed to do at present.

3. The life of the adult female, who has already contracted relations with society, is of incomparatively greater value, as judged by human standards, than the problematical existence of an unborn babe. Moreover, the expectancy of life in such children is decidedly less than in children of normal birth. If the operation is performed before the objective changes of labor are evident, as in the case under discussion, there is the risk of premature introduction of pregnancy, of obviously serious prognostic moment with reference to the child. The necessary early ligation of the cord deprives the infant of an average amount of blood of 92 grams (Budin, Ribemont). The mother is seldom able, even if she were to be permitted, to suckle her child. Finally, the offspring of women, affected with rachitis or osteomalacia, are frequently feeble, sickly, and unable to resist the unfavorable influence of the environment, entirely apart from the effect of hereditary disease. It is not my intention to use the death of the child in this particular case as an illustration of the truth of the statement just made,

² Wyder, Archiv. f. Gyn., Bd. xxxii., Hft. 1, p. 60.

³ Leopold, "Der Kaiserschnitt," etc., Stuttgart, 1888.

⁴ L. c., p. 164.

⁵ L. c., p. 116.

since in my judgment that event occurred chiefly as the result of most gross carelessness, *i.e.*, exposure of the child before an open window on one of those bitterly cold days in the latter part of March. Of the twenty-three children delivered alive by Leopold, one died a few hours after the operation (neglected shoulder presentation, laceration of the liver), eight died principally from cholera infantum within from three weeks to one year of the operation, eleven were living at the expiration of one year. The fate of three is unknown.

I do not wish to be regarded as an obstructionist, but desire merely to utter a voice of warning. In this "Cæsarean Revolution in Progress in the United States," let us go slowly. In the words of Professor Cameron, of Montreal, that I quote from a letter, and without his permission, "Too much has been claimed for the section, a reaction is bound to set in ere long." Draw the lines of indication and condition more exactly, and surrender the operation to a special class of practitioners.

III. *The Operation.*—The items of special interest in connection with this particular case of Cæsarean section are:

1. In the selection of the time of operation, I acted upon Schroeder's advice, and chose the latest possible moment before labor actually began. The advantages of an aseptic genital canal, daylight, adequate assistance, and the like outweigh the danger of atony after evacuation of the uterus. The researches of J. Braxton Hicks⁶ on "The intermittent contractions of the uterus during the whole of pregnancy" are perfectly familiar to the English-reading profession. In a recent note this observer writes, "These intermittent contractions, always going on, are ready to be intensified by any exciting cause, and especially so at the periods of the suspended menstruation." . . . "The rapidity with which labor can be induced at almost any time of pregnancy is explained now quite readily. Formerly the fact was not explained; indeed, the time for termination of delivery can be precisely stated—the whole process done to order, as Dr. Robert Barnes and myself have pointed out. Dilate the os by elastic bags, turn the fœtus by my method, and in two hours generally the fœtus is expelled. The whole need not occupy more than from six to eight hours." I was present some years ago at a Cæsarean section performed shortly before term by Professor Spaeth, assisted by Dr. Lumbe and Dr. Ehrendorfer. In this case, as in my own, there was no difficulty in securing retraction after the evacuation of the viscus. Of course, one runs the risk of moment to the child—of interrupting pregnancy some time before term, since only an approximate estimate of the time of gestation can be made from the data we can at present command.

2. The uterus was incised *in situ* and the liquor amnii evacuated through the abdominal cut. Leopold recommends the eventration of the uterus before incision, and it is the common custom to rupture the amnion *per vaginam*. Säger, in his paper read at the International Medical Congress, recommends the course pursued in this case. I had confidence in the ability of Dr. Holmes' hands to keep blood and liquor amnii out of the peritoneal cavity, and a short cut is of obvious advantage in retaining the intestinal mass within the abdominal cavity, not to mention other benefits.

3. Hæmorrhage was controlled by the normal tonus of the uterus and digital compression of the lower uterine segment. I did not apply the elastic ligature around the lower uterine segment before or after the uterine incision on account of the danger of paralysis of the structures at and below the point of compression, a danger to which Säger⁷, Doleris, and others have called attention. The amount of blood lost during the incision need not be much greater *without* than *with* the elastic ligature. It need not be much more than the amount of blood in the uterus at the time the incision is begun, provided the subsequent procedures are executed quickly. The quantity of blood in the uterus at the time the incision is begun is necessarily lost.

4. The long laparotomy needle of Thomas Keith rendered the closure of the uterine wound easily and comparatively rapid. The puncture is very small, and is completely filled out by the suture material.

5. The suture material used in this case was silk. The influence of the suture material on the functions of the uterus, menstruation and pregnancy, is a question of grave practical moment. Leopold has rejected silver wire entirely and prefers chrome catgut to silk. In nine consecutive cases he has used this material with entire satisfaction.

The superficial uterine suture was intended to effect linear union of the incised peritoneum, and no attempt was made to fold that membrane into the divided muscularis in order to oppose peritoneal surfaces of relatively great areas. This constitutes a departure from Säger's method. Schröder pointed out the essential weakness in the sero-serous suture, when he called attention to the fact that incised wounds with their edges accurately approximated are surer to heal than opposed peritoneal surfaces. In order that opposed peritoneal surfaces should unite, some new irritation is necessary to produce adhesive inflammation. This observation has since been confirmed by the investigation of Zweifel, Graser⁸ and J. Veit.⁹

⁷ Transactions of Ninth International Medical Congress.

⁸ Habilitationsschrift, Erlanger, 1886.

⁹ Deutsche med. Wochenschr., 1888, No. 17.

DR. C. T. PARKES: As I was present at Dr. Etheridge's operation, I should like to say a few words in regard to some of the impressions made upon me by the operation. First, in regard to its severity: so far as my experience goes with disease or injury affecting the abdominal cavity, I am sure I have been through cases quite often that would give me a great deal more anxiety, and be found more troublesome to manage than the doing of this operation. It struck me as being a very simple operation, at least to any one who is accustomed to having anything at all to do with the abdominal cavity. In the first place, the uterus is so large and it fills up so much of the cavity of the abdomen, that all the other viscera are out of the way, as was beautifully illustrated by Dr. Jaggard; there was nothing to be seen when the abdominal cavity was opened except the uterus, and it was very easy for the surgeon to open it. It was one of the easiest things imaginable to get the contents of the uterus out. So far as the flow of blood was concerned, I did not think there was any great amount of blood lost, considering the tissues divided and the size of the vessels cut. The gush is at first rather astonishing, but after a little time there is a rapid cessation of the bleeding. The bleeding in this case was very readily controlled by compression, and it did not strike me as being hurtful to the patient. I am quite sure she did not show any of the signs that are so often present when a large amount of blood is lost in other parts of the body. I am sorry that a complete post-mortem was not made after the death of the patient because I was very desirous of seeing the result of the manner of suturing that was adopted, because it struck me as being very safe. After the suturing was done, the wound was perfectly dry in every way, and after this part of the work was over and the operation done, with the exception of closing the abdominal wound, no sponging was required. There seemed to be no trouble in keeping everything out of the abdominal cavity, either amniotic fluid or blood.

Another point struck me in this case, not directly in connection with Cæsarean section, but as interesting in obstetrics. I have always been taught and always supposed that, during the development of the uterus in the latter stages of pregnancy, all parts were dilated, that the cervix was opened out and became part of the body, that it was thinned out so that the cervix and body became continuous, but to my astonishment, when the body of this uterus was exposed, the cervix was perfect in shape and retained the same relation to the body as in the normal state. There did not seem to be any losing of the cervix in the body by dilatation.

DR. J. C. HOAG: With regard to the technique of the operation, I remember to have read that on one occasion, when there was quite profuse hæm-

orrhage, and where retraction and contraction did not take place after the operation, the operator was bold enough to keep the uterus open for an hour and a half, keeping it packed with ice, and that the patient made a good recovery. I have also noticed somewhere that some operator has suggested the advisability of putting in a few sutures in the abdominal wound previous to incising the uterus, so that after removing the child the walls might be drawn together somewhat, and thus aid in the prevention of accumulations in the peritoneum.

DR. CHARLES WARRINGTON EARL: I would like to ask Dr. Etheridge one question: Were you able, in the time at your command, to make any effort at trying to find, through the incision in the abdominal wall, the nature of that obstruction below? You knew there was a fluctuating tumor there, did you examine it at the time of the operation?

DR. ETHERIDGE: I did not. I was so anxious to close up everything and get it out of the way that I did nothing of the sort. I was very greatly disappointed in our inability to secure a post-mortem examination. The next morning when I reached the hospital, about half-past nine, the body had been taken away, so that that part of it will always have to remain obscure. In regard to doing the other operation of opening the abscess and letting the discharge come away from it, I can say this: I have my doubts as to the possibility of saving the woman under the circumstances, from the fact that the pelvic cavity was not sufficiently enlarged by the evacuation of the tumor to admit of pulling the child through. This still constitutes, in my mind, an imperative objection to opening the tumor before the attempt at Cæsarean section.

DR. W. W. JAGGARD, in closing the discussion, said he was grateful to the Fellows for the kind attention given to his paper. He thought Dr. Parkes' notion of Cæsarean section as expressed in his own words, was erroneous and calculated to mislead. The *technique* of the operation is apparently simple, but the dangers of shock, hæmorrhage, and sepsis are constantly present, and every minutest detail demanded the most critical attention. The terrible mortality of the operation with us in the United States abundantly demonstrates its formidable character.

DR. CHARLES T. PARKES read a report of

FIRST FIFTY OPERATIONS FOR OVARIAN TUMORS.

The mortality in these cases was 4 per cent. I shall attempt to group together, in a somewhat practical way, the deductions which come to my mind as the outgrowth of this amount of work. The attempts to secure asepsis—to surely save one's patient from the dangers of fermentation, suppuration, and decomposition of wound secretions—brooks no neglect of any kind, in the

items already mentioned. Nothing that is used or brought in contact with the patient should be allowed to pass without the closest inspection by the operator himself. The patient puts her life in the operator's hands, not in those of an assistant, and is entitled to the former's own care and attention to the smallest detail in the preparations of needles, forceps, and instruments of all kinds, ligatures, sponges, and dressings. Sponges should not be used the second time in abdominal operations, no matter how well they are cleaned.

The greatest diligence should be observed in keeping everything harmful out of the peritoneal cavity. Reference is made not so much to foreign bodies of large or small size, although such ought never to occur, as to the escape of the contents of the cyst into the cavity. The contents can usually be kept out of the peritoneal sac by making the cyst constantly expand the edges of the abdominal incision during the necessary manipulations, by careful pressure against the tumor by an assistant.

The ligatures used have always been of carbonized silk, and they have never given rise to any trouble. In the greatest number of cases the pedicle has been clamped, the tumor removed and the stump thoroughly cauterized down even with the clamp. Then the pedicle was sufficiently subdivided just below the clamp and ligated with silk, after which the clamp was removed and the stump dropped. I have never had, following this method, any bleeding, or been called upon to reapply the ligature, or fish up a stump out of the pelvis after it had been dropped, to stay hæmorrhage. It is the method used by Dr. Homan, of Boston.

The ends of a ligature just tied should not be used for the purpose of bringing the tied tissue into view for inspection, especially against using them to in any way steady or lift the pedicle.

My experience confirms the great worth and necessity for the drainage-tube in many cases. Cases with many vascular adhesions leaving extensive oozing surfaces seem to always require the drain. Many cases would undoubtedly do better with it, even in which the raw surface is not large. One is more apt to err on the side of leaving it out than of making use of it too frequently. It takes but little over-weight of absorption and elimination of even not badly contaminated fluids to upset a patient's easy recovery, which might have all been obviated by the use of a drain for 24 or 48 hours. I have not noticed much difference in its workings, whether it be of glass or rubber.

The abdominal wound has always been closed with the silk suture passed carefully and carried through the different layers of the abdominal walls, including the peritoneum. It does not seem that any more satisfactory method has been advanced. It is quickly executed, and absolutely

trustworthy in the vast majority of cases. Two of my cases have had ventral hernia follow, but I am inclined to think other things had something to do with the occurrence of the complication; such as too early assumption of the erect position, too free motion, and discarding the abdominal support too soon. In very thick, fat walls, the use of three or four button-stay sutures, introduced well away from the edges of the incision, is of great advantage in maintaining the parts in apposition and conducing to early and firm union.

In the after-treatment of the earlier cases, it was the rule to use the catheter to empty the bladder six hours after operating. Quite a number of the cases developed a troublesome cystitis and in some cases a urethritis, no matter what care was taken with the instrument or in its introduction. Of late it is not used unless absolutely required. The patient is induced to make earnest efforts at self-relief, and success generally follows these efforts, and cystitis has ceased to be a complication.

It has become my habit not to feel concerned about a temperature up to 101° Fahrenheit, coming during the first three or four days after an operation, if it be unaccompanied with unusual pain, headache, or anorexia. By securing a free action from the bowels by the administration of 5 grs. of hydrarg. submur., followed in due time by some saline cathartic, and urging the patient to partake freely of water, the temperature ordinarily drops to about normal in twenty-four hours. If, with a nearly normal temperature for several days after operation, it suddenly mounts to 100° or more, some complication is impending, and it must be sought for with great care. Latterly it has been a surprise to me how many of the cases go on to a safe recovery without the administration of any medicine. If sepsis is avoided the individual's own powers of repair seems entirely competent to combat other complications with the simplest of assistance. When the pain is a complication, rectal injection of the tr. opii deodorata, in full, free doses (30 drops or more), has always seemed to cause the least disturbance and accomplish the best results.

The internal remedies from which the best results have been obtained for the relief of tympanites are the spts. terabintha and tr. nux vomica; the former to allay gaseous fermentation and as an antiseptic; the latter acting probably as a stimulant to intestinal peristalsis. It has never seemed to me that much if any good was accomplished by the rectal tube. It is not my wish to advise against its use, for many operators believe in its efficiency and use it constantly.

Tympanites, like so many other complications when they come, is usually the result of septic infection, and is best dealt with by keeping the germs away from the patient before, during, and after the operation.

The fluid I am in the habit of using for purposes of washing or irrigation is plain distilled or boiled water, with the addition of a small quantity of carbolic acid, making a solution of a strength of about 2 per cent. It does not seem certain that the germicidal power of this solution is of much consequence, still it does not seem worth while to dispense with it entirely. In washing out the peritoneal cavity, if occasion requires, a strong solution of boracic acid is used, and has done its work harmlessly and satisfactorily. Of course, reference is made here entirely to ovarian tumors, pure and simple. Infected cases, with pus present and other harmful fluids, require more powerful antiseptics and assiduous care in getting rid of their presence by every known means.

It seems to be of paramount importance to institute such care of the patient as will most surely prevent, diminish, or overcome the occurrence of shock. After every severe operation, much can be done by the use of external warmth and also care during the progress, by keeping wet clothes away from the body. I am still convinced of the efficacy of morphia and quinia administered half an hour or so previous to the commencement of an operation.

It can scarcely be denied that the patients do best if little, or better still, nothing is put into the stomach for twenty-four hours or more. If introduced, the effect is merely to increase the disposition to vomit.

DOMESTIC CORRESPONDENCE.

The New Orleans Medical and Surgical Journal and the Louisiana State Medical Society.

To the Members of the Louisiana State Medical Society:

Gentlemen:—The undersigned respectfully direct the attention of the officers and members of the Louisiana State Medical Society to a matter of importance which was brought to our notice on the 11th of June, 1888, by one of our most venerable and active members. The eminent physician and surgeon asks:

"Have you read in the June issue of the *New Orleans Med. and Surg. Journal* the editorial strictures upon the last meeting of the Louisiana State Medical Society? How shall such ill-natured and scurrilous criticisms be met? What is demanded of physicians attending the meeting at Monroe; and how shall they meet the rude, unjust and unprofessional attack?"

The "ill-natured, scurrilous, unjust and unprofessional criticisms" alluded to are to be found in the June number of the *New Orleans Med. and Surg. Journal*, 1888, pp. 984-987, under the head

of "Leading Articles," and title "The Tenth Annual Meeting of the State Medical Society." The quotations from the "editorial" will be confined to such portions as will illustrate the *animus* of the editorial staff of the *New Orleans Med. and Surg. Journal* in its attempt to defame and destroy the Louisiana State Medical Society.

The editors of the *New Orleans Med. and Surg. Journal* say: "Although, as we stated in our last number, owing to duties from which there was no escape, none of our staff was able to be present at the annual meeting of the State Medical Society at Monroe, we gather from the official minutes of the recording Secretary, which we published, that the meeting was characterized by the same indifference, idleness and slipshod irresponsibility that has for years made the Medical Society of Louisiana a disgrace instead of a pride to the profession of the State" (p. 984).

"A meeting of the Medical Society of any one of our sister States means the assemblage of all the best and wisest members of the profession, to consider well digested plans for the advancement of our interests, and the regulation of our conduct; to hear and discuss the latest and most valuable contributions that they are able to offer for mutual help and profit. *A meeting of the Louisiana Medical Society is the straggling together, in some locality, of a dozen or so of languid, inconsequent, unprepared medical men, bent for the most part upon a few days of rest, cigar-smoking and story-telling.* . . ." (p. 985).

"It is in no captious spirit that we write these lines, but it must have become apparent to every earnest man that the Louisiana State Medical Society should either undergo a great awakening and revivification, or be abandoned, cleared away as a useless time consumer and cumberer of the earth" (p. 987).

It is evident from the preceding quotations that the editorial staff of the *New Orleans Med. and Surg. Journal* have, without provocation and without warning, attacked not merely the body of earnest, laborious, patriotic and skilled physicians who assembled at Monroe on the 25th of April, 1888, but have endeavored, through the pages of their journal, to arraign the intelligence and medical attainments of the entire body of medical gentlemen composing the Louisiana State Medical Society. No honorable member of the medical profession objects to honest and courteous criticism, designed to advance the cause of science; but the wholesale abuse and slander of a medical society composed of two hundred gentlemen distinguished for their professional attainments and benevolent labors for the advancement of the highest and best interests of the citizens of Louisiana, should receive such brief, but decided condemnation as will place the authors in their true light before the medical profession.

We will consider this subject under two aspects,

namely: *First*, the relation of the editorial staff of the *New Orleans Med. and Surg. Journal* to the Louisiana State Medical Society. *Second*, the truth or falsehood of the statements of the staff of the *New Orleans Med. and Surg. Journal* with reference to the meeting of the State Medical Society in Monroe and elsewhere.

First. *The relations of the editorial staff of the New Orleans Medical and Surgical Journal to the Louisiana State Medical Society.* The following table has been drawn up from the record of the Louisiana State Medical Society, and from the *Medical Journal*, and shows that of the eight editors, seven are members of the Louisiana Medical Society, and four of the members have received appointments as members and chairmen of standing committees, and two of them have been honored with the position of Vice-President and one of them holds the position of Treasurer and Librarian.

NAME.	ADDRESS.	Date of Graduation in Medicine.	Date of Joining L. S. State Med. Society.	Honors and Positions conferred by the Louisiana State Medical Society, and dates thereof.
Geo. B. Lawrason, M.D.	New Orleans.	1883	1884	Member of Committee on Publication.
Henry Dickson Bruns, M.D.	New Orleans.	1881	1884	Annual Orator. Address delivered at New Iberia, 1886; Chm'n of Com. on Revision of Constitution and By-laws, 1886-87; member Com. on Scientific Essays, 1887-88; Com on Organization, 1887-88; on Necrology, 1887-88; Vice-Pres. 2d Congressional Dist. Louisiana, 1887-88.
F. W. Parham, M.D.	New Orleans.	1879	1879	Treas. and Librarian 1885-88; mem Com. on Publication, 1886-88; Com. on Rev. of Constitution, 1886-87; Com. on Necrology, 1887-88; Com. on Organization, 1887-88; Vice-Pres. 1st Congressional Dist., 1887-88.
Jno. H. Bemiss, M.D.	New Orleans.	1878	1884	Member of the Committee on Publication.
P. E. Archinard, M.D.	New Orleans.	1882	1885	
A. McShane, M.D.	New Orleans.	1882	1885	
E. L. Bemiss, M.D.	New Orleans.			
H. W. Blanck, M.D.		1884	1887	

From the preceding record it is evident, first, of the editorial staff of the *New Orleans Med. and Surg. Journal*, not one has served in the ranks of the profession more than ten years; the stench, therefore, which the editorial of June, 1888, has created in the nostrils of many of the venerable and experienced members of the Louisiana State Medical Society, must be referred to the inexperience and enthusiastic caviling of youth.

At the time of the meeting of the State Medical Society at Monroe, Dr. F. W. Parham held the position of Treasurer and Librarian and Vice-President of the First Congressional District, Dr. Henry Dickson Bruns held the position of Vice-President of the Second Congressional District, acting Chairman of the Committee on Scientific Essays, Chairman of the Committee on Revision of the Constitution, and member of the Committees on Organization and Necrology. Dr. Archinard was a member of the Committee on Publication.

The editorial staff of the *New Orleans Med. and Surg. Journal* have been honored and trusted by the Louisiana State Medical Society, and they have, when it suited their convenience, used the valuable reports and original papers read and presented by the officers and members of the Society to fill the pages of the *Journal*.

The most important matter for the action of the Society at its tenth annual session was the discussion, adoption or rejection of the revised constitution and by-laws, which had been printed in parallel columns with the old constitution in the Transactions of 1887. Dr. Bruns was the originator of this movement, at the New Iberia meeting, and the Committee consisted of Dr. H. D. Bruns, Dr. F. W. Parham, and Dr. A. B. Miles. Dr. Bruns was not only absent from the meeting at Monroe but, as far as our information extends, failed to address an official communication to the Louisiana State Medical Society explaining his failure to appear.

Whatever may be the limits of the circulation, or the professional standing of a medical journal, it should be borne in mind that it is an integral portion of the medical press of the country, and through its exchanges reaches far and wide for good or for evil.

If the "*Medical Society of Louisiana has been for years a disgrace instead of a pride to the profession of the State*," why did the editors of the *New Orleans Med. and Surg. Journal* hold membership, enjoy its honors, and use its valuable papers to enlighten and benefit their subscribers?

If the condition of things described by the editorial staff of the *New Orleans Med. and Surg. Journal* really existed, why did not the editors have the manhood to denounce these evils in person, face to face with their fellow-members, and from the high positions to which they had been elected?

Was it just and right to use the medical press to abuse and traduce their fellow-members?

Does the holding of position in the great army of American medical editors absolve men from the ordinary rules and dictates of friendship and professional courtesy?

Second. *The tenth annual meeting of the Louisiana State Medical Society, at Monroe, Louisiana, April 25 and 26, 1888.*—The gentlemen comprising this assemblage were about equal in numbers

to those assembled at New Iberia and Alexandria, the number of new members elected being 12 at New Iberia, 16 at Alexandria, and 16 at Monroe; total new members added to the Louisiana State Medical Society in 1886, 1887 and 1888, 44. The total number of permanent members to the meeting at New Iberia was 150; thus we have during the past three years an increment of nearly 30 per cent., or, more accurately, 29.3 per cent. When we reflect that the Louisiana State Medical Society had practically no existence until 1878, we must regard the steady increase in its members as proof that the medical profession in Louisiana regard its membership as an honor.

In medical attainments, earnestness, courteous and manly bearing, the medical gentlemen who assembled at Monroe, were the peers of the members of any similar gathering in Louisiana or any other State in this Republic.

The daily sessions were distinguished by careful and continuous scientific and executive labors, by harmony, and by courteous regard to parliamentary rules. The entire time of the sessions was devoted to the reading and discussion of papers, and the transaction of important business. The relative amount of scientific work accomplished may be seen from the following record of the past three meetings of the State Medical Society: Number of papers read at the New Iberia meeting, in 1886, 11; number of papers read at Alexandria, 1887, 16; number of papers read at Monroe, 1888, 14. Total, 41.

The character of the labors of the State Medical Society at Monroe will be shown to the medical profession in due time in the printed Transactions of 1888, which will vindicate the high attainments of the representatives of the regular medical profession.

The results of the meeting at Monroe are especially worthy of note when it is considered that the State of Louisiana had just passed through a heated political campaign, which had engaged the close attention and monopolized the energies of the citizens for several months; and when it is also remembered that Monroe is the most distant town from the large centres of population at which a meeting has been held, and is also comparatively inaccessible.

Louisiana suffered severely during the Civil War of 1861-1865, which overthrew her system of labor and destroyed the lives of many of her citizens. It was not until 1877 that there was any proper recognition by the Federal Government of the political and civil rights of a citizen of Louisiana.

With this change came the revival of the State Medical Society, and the little band of medical men, devoted to the advancement of the interests of the citizens and to the profession of their beloved State, has been steadily marching onwards, with the hope that they will, in time, enroll within

their ranks every honorable member of the regular medical profession, and gradually perfect and establish all measures relating to the elevation and protection of the medical profession of Louisiana.

It is not true, therefore, that "the Tenth Annual Meeting of the State Medical Society, at Monroe, Louisiana, was characterized by indifference, idleness and slipshod irresponsibility."

It is not true, therefore that "the meetings of the Louisiana Medical Society are the straggling together of a dozen or so, of languid, inconsequent, unprepared medical men, bent for the most part upon a few days of rest, cigar-smoking and storytelling."

Respectfully submitted,

JOSEPH JONES, M.D.,

Late President of Louisiana State Medical Society, Presiding Officer, Monroe, La., April 25 and 26, 1888, New Orleans, La.

J. J. Newton, Jr., M.D., President Louisiana State Medical Society, Bastrop, La.

Richard H. Day, M.D., Ex-President Louisiana State Medical Society, Baton Rouge, La.

T. O. Brewer, M.D., Chairman of the Committee of Arrangements for the Tenth Annual Meeting of the Louisiana Medical Society; and Vice-President for the Fifth Congressional District, Monroe, La.

J. D. Dupré, M.D., Ex-President Louisiana State Medical Society, Baton Rouge, La.

G. G. Belford, M.D., Bastrop, La.

Thomas Buffington, M.D., Baton Rouge, La.

T. G. Bridges, M.D., Bastrop, La.

W. R. McCreight, M.D., Bastrop, La.

T. M. Thornhill, M.D., Ex-Vice-President for the Fourth Congressional District, Arcadia, La.

J. M. Patterson, M.D., Arcadia, La.

W. O. White, M.D., Vice-President Third Congressional District, Abbeville, La.

J. C. Brown, M.D., Arcadia, La.

W. R. Aishman, M.D., President Vermillion Parish Medical Society, and other members of the Louisiana State Medical Society.

Transactions Ninth International Medical Congress Corrections.

Dear Sir: AS THE JOURNAL seems the medium through which information will most promptly reach the largest number of readers of the Transactions of the Ninth International Medical Congress, I ask you to publish the following corrections:

Vol. II, page 34, line 9, for "equations ($\frac{15.0}{20} + \frac{6.0}{20}$) x 2640 = 42240," read, "equation ($\frac{15.0}{20} + \frac{6.0}{20}$) x 2640 = 27.720."

Page 39, line 20, for "great ration," read *given* ration."

Page 40, third line from bottom, for "0.576," read, 0.0576.

Page 40, tenth line from bottom, for (Vide. p. 8) read, (Vide. p. 36).

Page 44, line 13, for figures on page 40, read "figures on page 41, viz. *N 17.—C 562 grs.*"

Page 47, Total Ration B., for "30. oz." read 30. 4 oz.

Your obedient servant,

Jos. R. SMITH,

Lieut.-Col. and Surgeon, U. S. Army.

St. Paul, Minn., June 27, 1888.

NECROLOGY.

A. Y. P. GARNETT, M.D.

GARNETT (ALEXANDER YELVERTON PAVTON), M.D., of Washington City, was born in Essex County, Va., Sept. 19, 1820, and died suddenly of heart failure, at the "Bright House," Rehoboth Beach, Delaware, on the evening of July 11, 1888. He was the son of Muscoe and Maria Wills Battle Garnett, who resided on a productive plantation near the Rappohanock River. One brother, an eminent lawyer, resides in Richmond, Va. As was the custom with well-to-do Virginians, when the doctor was a youth he was taught by private instructors, in his father's house. There he acquired a substantial education, including a knowledge of the classics and of French. Having selected medicine as a profession, and having read over the text-books, he attended the usual course of Lectures at the University of Pennsylvania, and received therefrom the degree of M.D. in 1841. His thesis submitted to the faculty on the occasion was on "Extra-uterine Gestation."

Shortly after obtaining his degree he presented himself before a Board of Naval Surgeons, and having passed a satisfactory examination, was commissioned an Assistant Surgeon in the U. S. Navy. In a few years he was promoted to Post-Assistant Surgeon. After serving for five years at sea in different parts of the world, he was stationed at the Navy Yard in Washington. Having married and desiring to be with his family, in 1848, he resigned from the service, and began practice in Washington. In 1851 he was enrolled as a member of the Medical Society, of the District of Columbia, and also a member of the Medical Association of the D. C. the same year. He joined the Pathological Society about the same time, and in 1852 he was elected its secretary. In these he held in succession the various offices, including that of the presidency. In 1852 he became a member of the American Medical Association, an organization to which he was much attached, and attended its meetings in 1853, 56, 68, 70, 76, 81, 83, 84, 85, 86, 87 and 1888. The last year he

was the president-elect and presiding officer, and delivered on the occasion of his taking the chair, a most able address.

Dr. Garnett was one of the original members of the American Climatological Society, and presented to it some able papers, and had one in course of preparation to be read at its next meeting. About 1858 he was appointed physician to the United States Penitentiary, which then and until after the war, stood at the foot of 4½ Street. The remaining parts of the old prison are now enclosed within the Arsenal or U. S. Artillery parade grounds. In 1858 he was elected Professor of Clinical Medicine in the National Medical College. Dr. Garnett "went south," as it is generally phrased, at the beginning of the war between the States, and, of course, vacated his chair in the medical faculty. During the Civil War he served as surgeon in the Confederate States Army, and was placed on duty in Richmond and had charge of two hospitals, and was at the same time a member of the Board of Medical Examiners for the Confederate Army. His professional ability, his character as a man, and his elegant address made him a favorite so that he was much employed as a family physician as well as sought after by the heads of the Confederate Government and officers on duty at Richmond. He was not only the physician and a valued trusted friend of Jefferson Davis, President of the Southern Confederacy, but of Gen. Lee and his family, and of most, if not all the families of the Cabinet officers of the Confederacy. He remained at the post assigned him until the surrender at Appomattox, and a new order of things assumed control. The cause for which he started life and fortune was lost. But the Union was saved. With health shattered, but with a brave heart, he returned to Washington a poor man, to begin life, as it were, again. Dr. Garnett had, before the war, by his energy and devotion to his profession, acquired considerable property in Washington. His life estate on this was, as a matter of course, confiscated by the Government of the United States. He was, however, enabled after a time to repurchase a portion of his property, and in this way saved something from the wreck.

Some time after resuming his practice, he was elected to the Chair of Practice in the National Medical College which he filled with ability until he resigned in 1870, because of the increasing demand upon his time by professional engagements when he was elected Emeritus Professor, which position he held at the time of his death. He was always a well prepared, fluent, graceful and entertaining lecturer, because he was a constant and careful reader of the latest and best works available.

Dr. Garnett's practice in Washington, as it had been in Richmond, was largely among the élite,

the wealthy and the more cultured classes, although he never refused his services to the poor or took a fee from a poor soldier. In the sick room he was sympathetic and encouraging, in his diagnosis he was thorough and searching, and in remedies heroic when such a course was demanded. To his patients he gave the most conscientious attention in season and out of season. Nature, as well as education and training, had made him the efficient friend of the sick, ever suggesting for them means to hasten their recovery and afford to them additional comforts in their confinement.

Among the public institutions in Washington, to which Dr. Garnett has been actively connected, are the Columbia Hospital for Women and the Children's Hospital, in which he was one of the Board of Directors as well as one of the consulting physicians. He has also served on the consulting staff of the Garfield Hospital since it was opened, and for many years he has been consulting physician to St. Ann's Asylum for foundlings, the Central Dispensary, and Emergency Hospital of which he has been one of the consulting physicians ever since it was founded.

Dr. Garnett, while devoted to his profession and fully accepting the obligations which a fulfillment of its duties demanded, nevertheless was public spirited and identified himself with all measures which interested the public and promoted the welfare of the City. In such matters he would lend his influence, give his time, and use his voice and pen. In 1874 he was chosen president of the "Southern Memorial Association" of this City, and delivered a most eloquent oration on the occasion of the reintering of the remains of the Confederate dead who had fallen during Gen. Early's advance upon Washington. The doctor was a ready and agreeable writer, and frequently availed himself of the daily paper to present views of questions he deemed desirable to have brought to the attention of the public. On medical matters he was punctilious, and whenever he wrote upon these, they were sent to medical journals. All his writings show the scholar and the gentleman. His contributions to medical literature are numerous and valuable, and on a great variety of topics. Dr. Garnett never limited the field of his professional labors to any one branch. He was, and felt himself to be a physician fully equipped and capable to perform good service in any its departments. Of late years, because of his eminence and large experience, he was much sought after by the younger men as a consulting physician. In difficult cases his qualities as a great physician came promptly to the front, for his analytical power in diagnosis, his memory of similar or analogous cases, either in his practice or his reading, and his ever ready resources to supply more effective remedies than had been tried, gave him a leading position.

Dr. Garnett, while in all the affairs of life ac-

corded the greatest possible deference to the opinion of others was himself never neutral or indifferent on live issues. He possessed matured opinions on most subjects, the result of reading and reflection, or would take pains to inform himself and never hesitated to express his convictions on all proper occasions. He was a charming conversationalist, a ready debater, and a polished writer. Dr. Garnett's labor to make the Ninth International Congress a success will long be remembered as they were highly appreciated by the medical profession throughout the world. Throughout the United States his name has been almost a password and shibboleth of ethical honors and of loyalty to the profession. He was from the inception of the project for the International Congress to meet in the United States, a zealous and untiring friend of the movement, and was one of the most active members of the Executive Committee, and as Chairman of the Local Committee of Arrangements acquitted himself with ability and to the entire satisfaction of the Congress and the citizens of Washington. And lastly as a member of the Committee of Publication of the Transactions, which is well nigh completed, he has rendered most valuable services. He was zealous and loyal to duty, heroic to the last. "The end crowns the work." While in the Navy he was united in marriage to Mary E., eldest daughter of the Hon. Henry A. Wise one of Virginia's great Governors. They had five children who grew to maturity. His wife and two children only survive, Henry Wise Garnett, one of our leading lawyers, and Miss Anne Garnett. The profession and the citizens of Washington will remember the early and lamented death of a son, young Dr. A. Y. P. Garnett, two years ago, who had but just entered upon practice.

The Medical Society of the District of Columbia met in special session, which was largely attended, when resolutions were passed expressive of the loss the Society and community has sustained in the death of Dr. Garnett. Many members spoke feelingly of him, and a sketch of his life was read. Drs. Hagner and Acker described his condition for some weeks before he left the city. Dr. J. B. Hamilton pronounced an admirable and deserved eulogy upon the deceased, which was supplemented by some most eloquent and beautifully expressed sentiments delineative of the character and professional life of Dr. Garnett. The Board of Directors of the Children's Hospital have held a special meeting and passed appreciative resolutions of the character of the doctor, and of his long and valuable services to that institution. Also a special meeting of the Directors of the Central Dispensary and Emergency Hospital has been held, and which took appropriate action to express the sense of the loss and high appreciation of the character of Dr. Garnett. Meetings have been called by other medical insti-

tutions with which he was connected, and will in due time report appreciative resolutions.

The funeral of Dr. Garnett took place on Saturday, July 14, from Epiphany Church, which was filled with former patients and sincere friends, who desired, in some way, to testify their respect for his memory. The services at the church were conducted by the Rev. Dr. Platt, of New York, assisted by the Rev. Dr. Leonard and Rev. Dr. Phelps. Dr. Garnett's remains were followed by a large cortege to their last resting place in "Rock Creek Church Cemetery."

J. M. T.

MISCELLANEOUS.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.—The following is the preliminary programme of the meeting to be held in Washington September 18, 19 and 20, 1888:

1. Clinical Observations on Diseases of the Testicle. Dr. L. B. Bangs, New York, N. Y.
2. Clinical Observations on Chronic Gonorrhœa, and
3. Two Cases of Cancer of the Seminal Vesicles, with pathological specimens. Dr. J. P. Bryson, St. Louis, Mo.
4. Operative Treatment of Hypertrophy of the Prostate, and
5. Case of Bowel ending in the Urethra of a Child 4 weeks old; Relief by Operation. Dr. A. T. Cabot, Boston, Mass.
6. On the Effects of Rapid Changes of Altitude in an Advanced Case of Interstitial Nephritis. Dr. George Chismore, San Francisco, Cal.
7. Connection between Masturbation and Stricture. Dr. S. W. Gross, Philadelphia, Pa.
8. Operations on the Kidney. Dr. W. H. Hingston, Montreal, Can.
9. Syphiloma of the Vulva. Dr. J. N. Hyde, Chicago, Ill.
10. The Curability of Urethral Stricture by Electricity; an Investigation, and
11. The Comparative Value of Suprapubic and Perineal Drainage in Curable and Incurable Bladder Disease. Dr. E. L. Keyes, New York, N. Y.
12. The Filaria Sanguinis Hominis in the United States, especially in its Relationship to Chylocele of the Tunica Vaginalis Testis. Dr. Wm. M. Mastin, Mobile, Ala.
13. A Case of Perineal Section for Traumatic Retention; Unusual Condition of the Bladder. Dr. J. E. Michael, Baltimore, Md.
14. The Prophylaxis of Syphilis. Dr. P. A. Morrow, New York, N. Y.
15. Unusual Case of Urethral Calculus. Dr. H. G. Mudd, St. Louis, Mo.
16. On the Radical Cure of Stricture by Dilating Urethrotomy, and
17. Demonstration of a Perfected Evacuator, and an Improvement in the Method of Removal of Débris from the Bladder. Dr. F. N. Otis, New York, N. Y.
18. Pyæmia as a Direct Sequel of Gonorrhœa. Dr. R. Park, Buffalo, N. Y.
19. Retrojections in Gonorrhœa. Dr. E. R. Palmer, Louisville, Ky.
20. Prostatotomy for Enlarged Prostate at the Age of 42. Dr. Abner Post, Boston, Mass.
21. A Case of Removal of both Testicles for Recurrent Carcinoma, and
22. A Case of Nephrolithiasis complicated with Hydro-nephrosis, in which Lumbar Nephrotomy was Performed. Dr. F. W. Rockwell, Brooklyn, N. Y.

23. Some Points on the Differential Diagnosis of Bladder and Kidney Affections, with Demonstrations of the Cystoscope and other Instruments, and

24. On the Physiology of the Bladder. Dr. Alexander W. Stein, New York, N. Y.

25. Local Treatment of Chronic Urethral Discharges. Dr. F. R. Sturgis, New York, N. Y.

26. Some Points on the Etiology of Stricture of the Urethra. Dr. R. W. Taylor, New York, N. Y.

27. Operative Treatment of Hypertrophy of the Prostate, and

28. Spontaneous Fracture of Stone in the Bladder. Dr. F. S. Watson, Boston, Mass.

29. The Relation of the Prostate to Chronic Urethral Discharges, and

The Value of the Tolerance of the Iodides as a Diagnostic of Syphilis, and

30. Urethral Stricture and Enlarged Prostate in their Relation to Vesical Calculus and Calculus Pyelitis, with Cases. Dr. J. William White, Philadelphia, Pa.

By invited guests:

31. The Prognosis of Stricture, based on thirty years' death record of Stricture at the London Hospital and the Practice at St. Peter's Hospital. Dr. E. Hurry Fenwick, London, Eng.

32. The Congenital Anomalies of the External Urethral Orifice. Dr. C. Kaufman, Zurich, Switzerland.

R. W. TAYLOR, Secretary.

THE AMERICAN CLIMATOLOGICAL ASSOCIATION will hold its fifth annual meeting in Washington, D. C., on September 18, 19 and 20, 1888, in connection with the Congress of American Physicians and Surgeons. The following papers and discussions have been arranged for, and others may be added to the list:

The President's Address, Dr. A. L. Loomis, New York; The Relation of High Altitudes to Germ Disease, Dr. S. A. Fisk, Colorado; Is Climate an Etiological Factor in Graves' Disease? Dr. R. G. Curtin, Philadelphia; An Environment Experiment Reported, Dr. E. L. Trudeau, Saranac Lake; Definite Results Obtained by the Climatic Treatment of Disease, Dr. A. Y. P. Garnett, Washington; Invalids Suited for Treatment at Colorado Springs, Dr. S. E. Solly, Colorado; Influence of Semi-Tropical Latitudes on Types of Disease, Dr. Juo. Guitéras, Charleston; Discussion: The Relative Importance of Different Climatic Elements in Treatment of Phthisis. Referee, Dr. E. T. Bruen, Philadelphia; Co-Referee, Dr. V. Y. Bowditch, Boston. Observations on the Use of Terebine, Dr. D. M. Cammann, New York; Climate and Bright's Disease, Dr. J. C. Wilson, Philadelphia. Discussion: The Mineral Waters of the United States; Therapeutic Value as Suggested by their Chemical Composition, Dr. A. C. Peale, Washington; Their Therapeutic Value in Gastro-Hepatic Diseases, Dr. Wm. Pepper, Philadelphia; Their Therapeutic Value in Urinary and Arthritic Diseases, Dr. A. H. Smith, New York; Their Therapeutic Value in Malarial Diseases, Dr. J. C. Van Bibber, Baltimore; Report on Mineral Springs, Dr. C. C. Rice, Chairman, New York; Interpleural Pathological Products; their Cause, Significance, and Special Relationship to Pulmonary Phthisis, Dr. J. R. Leaming, New York; Conditions which Tend to Render the Atmosphere of a Locality Aseptic, J. T. Whittaker, Cincinnati. Discussion: Influence of Altitude on Cardiac and Pulmonary Diseases. Referee, Dr. F. Donaldson, Sr., Baltimore; Co-Referee, Dr. J. J. Levick, Philadelphia. Climatic Characteristics of Texas, Dr. Morse K. Taylor, U. S. A., San Antonio; Therapeutic Differences of Mountain and Sea Air, Dr. W. H. Geddings, Aiken; Indications and Contraindications for Altitude in Treatment of Phthisis, Dr. F. I. Knight, Boston. Discussion of the Nasal and Neurotic Factors in Etiology of Asthma. Referee, Dr. F. H. Bosworth, New York; Co-Referee, Dr. E. L. Shurly, Detroit. Therapy of Climate, Dr. I. H. Platt, Lakewood; Therapy of Ocean Climate, Dr. A. L. Gihon, U. S. N.; Climatic Characteristics of

Roan Mountain, Eastern Tennessee, C. J. Kenworthy, Fla.; Notes of Summer in Switzerland, Dr. D. B. St. John Roosa, New York; An Epidemic of Cerebro-Spinal Meningitis in Central New York; Dr. W. T. Ford, Utica; Further Contribution to the Study of Consumption among the Indians; Dr. W. Matthews, U. S. A.

A. L. LOOMIS, M.D., LL.D., President,
J. B. WALKER, M.D., Secretary.

THE AMERICAN LARYNGOLOGICAL ASSOCIATION will hold its tenth annual Congress in Washington, D.C., on September 18, 19 and 20, 1888. The following is the preliminary programme:

1. Ten Years of Laryngology. Rufus P. Lincoln, M.D., New York.
2. Congenital Bony Occlusion of the Posterior Nares. Charles H. Knight, M.D., New York.
3. The Effects of varying Rates of Stimulation on the Action of the Recurrent Laryngeal Nerve. Franklin H. Hooper, M.D. Boston.
4. Subglottic Laryngeal Enchondroma. E. Fletcher Ingals, M.D., Chicago.
5. A Photographic Study of the Laryngeal Image during the Formation of the Registers, and Production of Variations in the Pitch of the Singing Voice. Thomas R. French, M.D., Brooklyn.
6. Lupus of the Nose, Pharynx and Larynx. Samuel Johnston, M.D., Baltimore.
7. Imaginary Lingual Ulceration. George M. Lefferts, M.D., New York.
8. A possible Substitute for Tracheotomy and Intubation in certain Cases. Edgar Holden, M.D., Newark.
9. Antiseptic Nasal Surgery. Clarence C. Rice, M.D., New York.
10. A Case of Sarcoma of the Tonsil. Alexander W. MacCoy, M.D., Philadelphia.
11. A Case of Subglottic Chronic Stenosis of the Larynx cured by Dilatation. Frank Donaldson, M.D., Baltimore.
12. Internal Esophagotomy. John O. Roe, M.D., Rochester.
13. The Treatment of Atrophic Rhinitis by the Galvanic Current. J. H. Hartman, M.D., Baltimore.
14. The Anatomy of the Nasal Chambers. Harrison Allen, M.D., Philadelphia.
15. Notes on a Case of Nasal Caries, complicated with Meningitis, successfully treated by means of the Surgical Drill. William C. Jarvis, M.D., New York.
16. On Fixation of one or both Vocal Bands in the Pharyngeal Position (so-called Abductor Paralysis). F. Donaldson, Jr., M.D., Baltimore.
17. Residence at certain High Altitudes as a means of Cure for Laryngeal Phthisis. Clinton Wagner, M.D., New York.
18. Further Investigations as to the existence of a Cortical Motor Centre for the Human Larynx. D. Bryson Delavan, M.D., New York.

Besides the above titles which have been received to date, papers have been promised by Drs. Morris J. Ash, J. Solis-Cohen, John N. Mackenzie and Beverley Robinson; and by Dr. A. Gouguenheim, of Paris. A number have yet to be heard from.

D. BRYSON DELAVAN,
Secretary.

THE AMERICAN PHYSIOLOGICAL SOCIETY will meet in Washington, D. C., September 18, 19 and 20, 1888. The following is a preliminary list of papers:

1. Dr. G. Stanley Hall. On the Therapeutic and Forensic Aspects of Hypnotism.
2. Dr. G. L. Goodale. On Enzymes Comparable with Papain, found in certain fruits of temperate climates.
3. Dr. H. P. Bowditch. On the Knee-jerk Phenomena.
4. Dr. W. P. Lombard. On the Nature of the Knee-jerk.
5. Dr. H. P. Bowditch. On the Effects of Varying Rates of Nerve Stimulation upon the Character of Muscular Movements.
6. Dr. C. S. Minot. Growth and Death.
7. Dr. C. S. Minot. The Cells of the Cortex Cerebri.

8. Dr. C. S. Minot. The Uterus during Gestation.
9. Dr. H. N. Martin. On the Temperature Limits of the Vitality of the Mammalian Heart.
10. Dr. H. H. Donaldson. Histological Changes Produced in Ganglion Cells by Stimulation.
11. Dr. Isaac Ott. On Fever.
12. Dr. W. T. Sedgwick. On the Distribution of Bacteria in Drinking-Waters and Public Buildings.
13. Dr. W. H. Howell. The Origin and Regeneration of Blood Corpuscles.
14. Dr. V. C. Vaughan. On certain Ptomaines.
15. Dr. R. H. Chittenden. On the Physiological Action of Uranium Salts.
16. Dr. R. H. Chittenden. On Myosin and certain of its Decomposition Products.
17. Dr. R. H. Chittenden. On the Influence of Acetimidide or Antifebrin on Proteid Metabolism.

H. NEWELL MARTIN, Secretary.

A SANITARY CONVENTION and meeting of Executive Association of Health Officers will be held at Lindsay, Ont., August 14, 15 and 16, 1888.

Passes to Sturgeon Point Hotel will be presented to delegates. Morning and evening boats connect with Lindsay. A citizens' excursion to those attending convention will also be arranged. Sturgeon Point is already a favorite summer resort for tourists and health seekers. It is situated on Sturgeon Lake, twelve miles from Lindsay. Arrangements have been made with the Canadian Pacific and Grand Trunk Railways by which parties signifying a desire to attend will be provided with certificates at a fare and a third upon making application to

P. PALMER BURROWS,
Pres. Executive Ass'n Health Officers.

THE NEW YORK POLYCLINIC HOSPITAL.—The Faculty of the New York Polyclinic have decided to increase the clinical facilities of this institution by establishing a spacious hospital immediately connected with the college building. It will be opened for the reception of patients in October next.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 7, 1888, to July 13, 1888.

Major Calvin De Witt, Surgeon U. S. Army, leave of absence extended one month. S. O. 159, A. G. O., July 11, 1888.
Lieut. William B. Banister, Asst. Surgeon, leave of absence extended twenty-seven days. S. O. 157, A. G. O., July 9, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending July 14, 1888.

Asst. Surgeon Wm. Martin, ordered to Marine Rendezvous, San Francisco, Cal., and to attend officers of the Navy and Marine Corps not otherwise provided with medical aid.
Asst. Surgeon E. W. Auzal, detached from duty at Marine Rendezvous, San Francisco, Cal., and special duty there, and ordered to the Naval Academy.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending July 16, 1888.

Surgeon P. H. Baillache, to proceed to Delaware Break-water Quarantine Station as Inspector. July 6, 1888.
Surgeon C. S. D. Fessenden, leave of absence extended thirty days on account of sickness. July 14, 1888.
Surgeon George Purviance, to proceed to Chattanooga, Tenn., as inspector. July 6, 1888.
Surgeon H. W. Sawtelle, granted leave of absence for twenty-three days. July 9, 1888.
Asst. Surgeon W. P. McIntosh, to proceed to Galveston, Tex., for temporary duty. July 14, 1888.
Asst. Surgeon W. J. Pettus, granted leave of absence for thirty days. July 16, 1888.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, JULY 28, 1888.

No. 4.

ORIGINAL ARTICLES.

THE MECHANISM OF PNEUMONIA: AND ITS TREATMENT.

Read in the Session of Practice of Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May 8, 1888.

BY W. C. VAN BIBBER, M.D.,
OF BALTIMORE, MD.

The two objects of this paper are, *first*, an inquiry into the initial causes of pneumonia; and *secondly*, the treatment of the disease.

In order to demonstrate what may be termed the "Mechanism of Pneumonia" in a manner deemed necessary for the purpose of this paper, a few words concerning the anatomical arrangement of the parts must be said.

First, as to the definition of pneumonia itself. Since the crepitant râle was discovered, and its significance explained, it has been believed by auscultators that pathological changes may occur on one side only of the dividing membrane or partition of the lungs, whilst at the same time, upon the other side of this membrane, there may, at the beginning of the trouble, be but little or no disease. It is further believed, that by means of this râle, the diseases on the one side of this partition in the lungs can be distinguished from those upon the other side.

The wonder of this achievement is all the greater, because this dividing or partition wall is neither thick nor straight, but ramifies in the most zigzag manner throughout the planes of the lungs in all directions. It is somewhat a stretch of the imagination to call it a wall or partition, as it is a microscopic picture, yet none the less effective to fulfil its intention. For the practical purpose in view it may be thus described:

When one takes a deep inhalation, the air goes towards the minute bronchi, and empties into the stationary air space which fills the alveoli and infundibula of the lungs. We know that the heart is beating, and that the minute branches from the pulmonary artery are winding around and around the partitions of these alveoli and infundibula in an interweaving and spiral manner; so that, upon this side (the air side), we have the air, and, to use a Saxon word, on "yonder" side we have the blood in its vessels—and we cannot strictly say on

yonder side either—because the intertwining, plaited arrangement of the vessels puts the blood on both sides.

It is this dividing wall, such as it is, which stands as a basis of the classification of the diseases of the lungs into two distinct varieties. These are diagnosed by different sounds and symptoms; and, notwithstanding the minuteness of the wall, they are, at present, treated upon entirely different principles, and with different remedies. It must be remembered, also, that the air from the outside, in all its variations of quality and temperature, is in communication with the blood on the inside only as it is contained in its vessels; and these vessels are arranged on the air cells, in a system of capillaries which, although not the most minute, are more numerous than in any other part of the body. It is the changes in these capillaries that are to be considered. When they are congested or inflamed; this is pneumonia.

There are twenty-five diseases of the lungs and air-passages now described. Seventeen of these are described as occurring upon the air-side or external to this partition wall; six as occurring across its border, or upon the inside of it; and in the remaining two, as the double nomenclature indicates, the wall membrane itself is involved in the disease with its adjacent lung substance on both sides. The lungs are therefore exposed to causes of disease from without as well as from within, and for this reason, it may be, their diseases, far above all others, are the most destructive to human life. The statistics of one of them alone (consumption) claims for it the first place upon the mortuary list, and for another, pneumonia, there is claimed the second place in the mortuary list, in some situations.

Nothing more need be said concerning the importance of the study of the disease now under consideration than that, for every man in this room over 65 years old, according to the statistics, if he dies of any acute disease, there are nine chances in ten that he will die of pneumonia. Hence the further study of this disease claims attention. It is generally admitted that there must be something wrong, in this country at least, about its treatment, its statistics or its study, because, it is said, there are now a greater proportionate number of cases, and a larger mortality, than there

were forty years ago,¹ and this is not the case in England. Should this indeed be the fact in our country, if now, in this paper, a deviation from the beaten road along which the disease has been observed so long should be attempted, so that it may be viewed from a different standpoint and approached in a new way, let us hope that some good may result; particularly if that way should fortunately prove trustworthy and direct.

The term "mechanism of pneumonia" has not hitherto been used by those who have described and explained the nature of this disease. The term has been used for other diseases of the lungs, as the mechanism of empysema,² etc. It is a good term, and may be used to convey something more than what is known as the etiology of the disease, and likewise something different from its morbid anatomy and pathological histology; indeed, it may stand intermediate between these two, in an attempt to connect them as cause and effect. By means of the term "mechanism of pneumonia" an attempt will be made to show, in a general way, how those different changes in the structure of the lungs are brought about which are recognized during life; which are demonstrated by the scalpel; are seen after death by the microscope; and are so minutely described by classical authors in their different departments. In order to do this, it is necessary to seek for the cause, or causes, which throw the blood from its natural healthy channels, and produce these effects, or changes. It is admitted that congestion of the capillaries is the first step in the process of pneumonia. It only remains, therefore, to show in what way this congestion may be produced. It will be admitted that if the *modus operandi* of the predisposing causes are made clear, viz., as to how they assist, and favor the production of pneumonia when they are brought into action by the exciting cause—then a study of this process may give many valuable suggestions in the management of this disease.

It may now be asked, What are really the exciting, and predisposing, causes of pneumonia? A better way of putting the question, however, at this time and under all the circumstances, may be, What are *not* the predisposing causes of pneumonia? In general terms it may be said, in the language of a modern author, "that all conditions which tend to impair the general health favor the occurrence of pneumonia."³ If this be accepted as a medical aphorism, then the etiology of pneumonia would comprise a long list, and one too endless to be used at present. Yet some selection of these causes must be made, and in doing so, those *only* that are admitted to be the most frequent will be considered.

Amongst the recognized predisposing causes of pneumonia there are four, which are quite different from each other, and each one of them must produce the same effect, viz.: congestion in the cap-

illaries, by a different mode of action. These are age, cold, malaria and alcohol.

What could be more different from one another than the four causes which have been enumerated? Two of them, at least, deteriorate the general health, each in its own way; but by what particular manner or mechanism, why, or how, any one, or all of them combined, become direct or predisposing causes of pneumonia, may be of interest to inquire, and to understand if we can.

As regards age, so much would have to be said for all periods of life, that it is impossible to treat of it now. It will be alluded to again in the treatment of the disease.

It is curiously doubted now by some of the most eminent physicians and pathologists, whether cold is as frequent a cause of pneumonia as it was at one time considered to be; or, indeed, whether it has any agency in causing the disease at all. This is, indeed, the great absorbing idea of the day, so far as this disease is concerned, and about which more must be said hereafter.

Fully appreciating the importance of pneumonia, on account of its increasing prevalence, its destructive crippling of health, and its large mortality, our American physicians are now quite dissatisfied with its present indefinite position, and the great desire seems to be to take it out of the catalogue of general diseases produced by common causes, and to rank it as a specific disease, having a bacterial origin. Croupous pneumonia is one of the most common diseases which affect the lungs. It is the type of all other classified pneumonias. Its symptoms, its course, its issues, are therefore very well known, and if *cold* be excluded from its causation we are more ignorant of its etiology than of any of its fellows. Yet, of it, one of the leading minds of the present day says: "Although several most trustworthy observations enable us to put down cold as its usual cause, this gives us no insight into the way in which the chill operates. For what has partial chilling of the skin to do with the inflammation of an internal organ?"⁴ But inasmuch as the bacteria of pneumonia has not yet been found, what will now be said, as a contribution to its treatment, will be confined to cold, malaria and alcohol, as its exciting and predisposing causes.

And first as to cold. When speaking of it, the phrase "taking cold" must not be confounded with the word *cold* when used as an adjective, as in designating a cold wave, cold weather, etc. In this sense the word *cold* is simply used as an adjective. But the phrase "*taking cold*," conveying the idea that a diseased condition, or a morbid action, is brought by this means into the system, is such an integral part of the nursery catechism that no one will be inclined to doubt the fact. It

² Rindfleisch. Path. Histology, vol. ii, p. 5.

³ T. Henry Green. Path. and Morbid Anatomy, p. 364.

⁴ Rindfleisch. Pathol. Histology, vol. ii, p. 55.

¹ Henry H. Hartshorne, M.D. Pneumonia, Its Mortality and Treatment, p. 5.

is an expression used alike by physicians and patients; it is accepted as a truth amongst the earliest impressions of life; it has been felt by every one in their own persons, and is known as a phrase in every language, from the earliest to the latest. It is found in the Hebrew, Greek, Latin, and all written modern languages and, according to some good authorities, in the languages of our Indian tribes. When used in connection with pneumonia it will be well to be quite precise as to its exact significance, because, if "taking cold" does predispose to, or can directly cause this disease, it is surely well to hold on to the truth in this matter; for it is plain, if "taking cold" does produce it at all, it must accomplish it by some mechanism, or by some order of action. Practically, it is within the scope and bearing of the term "mechanism of pneumonia" to reason upon the process of "taking cold" somewhat in this way:

A patient, having been exposed in a cold place to a continuation of cold air, gets thoroughly chilled; and in this condition, by continuing to inhale the cold air, the already chilled blood in the pulmonary capillaries gets yet more thoroughly chilled by cold applied from without and within, until finally, at various points along the partition walls of the lungs the circulation, becoming slower, is at length checked, and a stasis, or obstruction, results in the network of capillaries, which are spread out so numerously over the air vesicles. These points of obstruction increase with each round of the circulation, until ultimately a large portion of the lung may become involved, and the internal or blood side of the membrane becomes more or less rapidly engorged—giving the first stage of pneumonia.

Notwithstanding the assertions of many to the contrary, yet, it is a fact, that almost every case of pneumonia that comes before the clinician, has a history of some exposure to cold like this, and there are some reasons why a process similar to this may be looked upon as a simple mechanism, or cause, by which the lung membrane can become engorged or blocked at the point in question. A few of the reasons why this may be accepted as a fact are as follows: In theory, at least, it is in accordance with the laws governing the circulation of the blood in the body; it is tantamount in effect to the law or doctrine once held by the profession concerning a spasm of the capillaries; it is plausible, and not contrary to reason. If the pneumonia does result from cold, it must do so by some mechanism. The parts are there as they have been described; the bronchial terminals, the alveoli, the infundibula, the intertwining arterioles and the numerous capillaries filled with blood; if these parts are quickly changed from a state of activity and health, to that of disease, by cold, how else can it have been done except by stopping the circulation in the capillaries in a manner similar to the one explained? Should this be asserted as

a doctrine, it would be a ready explanation for a diseased condition, concerning which there has been, and is yet, a controversy which seems to be interminable, and concerning which the wanted bacterial cause is not to-day considered a solution.

A celebrated pathologist of the present day describes what he calls "the initial steps of the textural alterations in catarrhal pneumonia as follows: "The alveolar epithelia swell," he says, "and produce a thick and continuous layer of protoplasm which is detached from the wall of the alveoli in transverse sections as a nucleated band. The individual cells then separate; the nuclei divide; and active corpuscular proliferation sets in; large spheroidal cells with vesicular nuclei are produced; these cannot be otherwise described than as epithelial elements; they proceed to fill the alveoli, spreading through the stagnant serum which these contain. The intensity of their corpuscular proliferation, the quantity of epithelial elements produced, determine the further course of the inflammation."⁶

The mistake made in this description, from the point of view taken here, is, that these textural alterations are *not* initial. The mechanism of pneumonia, in order to be used to advantage as a basis of treatment, should have its starting point at least one step further backwards than the textural changes as they are described by Colberg; with an endeavor to show what caused the congestion. Whether this is cold or not, makes a decided difference in treatment. It may be a matter of regret that anything should prevent this explanation of the mechanism of cold in producing the engorgement of pneumonia, from being accepted, because a good system of practice can be built upon it; but there are two prominent points to be considered, both of which seem, at first, to be directly opposed to this view, but which, singular to relate, both of them, upon reflection, are really in its favor.

The first point is, that the cold air does *not* get down to the lung partition-wall so as to impinge upon and cool the capillaries. It stops at the stationary air space. The external air goes down the bronchial terminals, only to a certain measured calibre in the vessels, and there it stops; from that point to the partition-wall of the lungs the process of respiration is carried on by the diffusion of gases. This is a provision, which may have been made by nature, expressly to prevent this very accident.

The second fact is, to be found in the general belief amongst physiologists, and not without good reasons, that it is hard to chill the blood in the internal parts of man, and especially in the lungs, by external cold.

In reference to the first fact, it may be said, the

⁶ Rindfleisch. *Pathol. Histology*, vol. ii., p. 15, where he quotes Colberg who believes that the alveoli are lined with epithelium; others do not.

statistics of pneumonia, as they are now accumulated, show that this disease is much more common in our Southern States, than in the colder climates of our Northern States; and that this law maintains for colder and warmer climates throughout the world, so that, it is asserted, even in the extreme north the Eskimo are peculiarly exempt from pneumonia.⁷ The physiological working of the stationary air space, between the external cold air and the partition wall of the lungs would not only satisfactorily account for this point as a fact, but would render the assertion of the rarity of pneumonia in a cold climate, highly probable. Where the climate is cold the muscular structure of the bronchial tubes, which presides over the depth of the air space, regulates this matter automatically by a vital force, according to natural and preservative laws. On the contrary to this, where the climate is warm, there is a smaller development of muscular structure in the bronchia, and at the same time, a greater relaxation of the system generally, as well as of the delicate lung textures in particular. The lungs, therefore, expand more readily in the warmer climates and permit the air to pass unhindered lower down into the tubes and nearer to the pulmonary capillaries because the stationary air space is less. In this way the atmospheric vicissitudes that occur very suddenly in our Southern States, have many unguarded opportunities, especially at night, to cool the blood and block its circulation in the lung capillaries. On account of these two facts, if cold is the exciting agent, it might reasonably be expected that there would be a greater prevalence of pneumonia in the southern and warmer climates. But for the reasons already mentioned, the collected statistics, cannot in justice be used, as they have been, for an argument against the theory of the production of pneumonia by cold, according to the mechanism which has been advanced.

In treating of the second fact, viz: That it is hard to chill the blood in the lungs by external cold. It is to be regretted that no means are yet invented by which the temperature of the blood in the pulmonary capillaries can be registered. So far as the lungs are concerned anatomically, they are near the heart, and have a stream of warm blood constantly pumped into them. But there are no lack of illustrations to prove that the general mass of the blood may be reduced in temperature by cold applied externally, even by "chilling of the skin by cold;" cold baths, cold rooms, cold water beds, demonstrate this fact in the treatment of fever. All are familiar with the effect of cold on the function of the brain, and how ice bags produce torpor.

To these illustrations it may be added, that for a long time it was the popular, as well as the clinical belief, held steadfastly until recently, that

the agency of "taking cold" in causing pulmonary congestion was a fact established by long observation.

This completes what will be said concerning the mechanism of pneumonia by means of "taking cold." It now remains to show the way in which malaria and alcohol predispose to the same effect. The subject of bacteria will be treated separately, and in a paper by Prof. Wm. C. Welch, of the Johns Hopkins Hospital.

Malaria plays an important part in the statistics of the mortality of pneumonia. There are many kinds of malaria. It is a generic term. Sewer gas malaria in cities which has been asserted to produce pneumonia; house malaras in both city and country; ground malaria; overcrowding malaria, etc., in a great many varieties. But the only malaria that will be chosen for this demonstration is that great general malaria which occupies large districts of territory throughout the temperate and torrid zones, principally at elevations below 350 feet, and is found widespread in our country along sea-marshes and river bottoms; that malaria which produces chronic remittent fevers. The peculiar physiognomy and muddy complexion which this brings about, shows in each case the proportionate amount of textural changes which have been wrought by it. These textural changes are not always exactly the same in every malarial district, but they all affect the spleen, the liver, and the quality of the blood. The spleen is softened and enlarged, the liver is also enlarged, sometimes softened⁹ and again indurated,¹⁰ but always loaded with pigment; having the portal circulation obstructed. Geographically, this kind of malaria and pneumonia, according to the statistics of both diseases, increase progressively, going from the north to the equator. The manner by which this malaria predisposes to pulmonary congestion can be explained in a variety of ways involving more or less mechanical principles. The embarrassed portal circulation and the altered conditions of the blood, together with the marked debility which it produces in the vaso-motor nervous system, by weakening the heart and the muscles of respiration, are the principal factors from which the demonstrations can be made. Time prevents our entering into them more fully.

In what way, or more germane to our caption, by what mechanism, it may be asked, does the long continued habitual use of alcohol in excess predispose to pneumonia? The disease has been called the drunkard's pneumonia, and is a well-marked, well-known and a common disease. In our Southern States alcoholism and malaria often coexist in the same individual, and this is one of the principal causes for the large mortality of pneumonia in those States. The effect which alcohol produces on the liver and lungs has been

⁷ Loomis, System of Medicine. Pepper, p. 316.

⁸ Loomis—System of Medicine. Pepper, p. 317.

⁹ Anderson and Fricke.

¹⁰ Rindfleisch. Pathol. Histology, vol. ii, p.

thus described by Prof. H. Newell Martin of the Johns Hopkins University: "All the blood which flows through the mucous membrane of the stomach goes straight to the liver before it is carried to any other organ in the body. This blood of course takes with it whatever it has absorbed from the stomach. It is therefore not strange that the liver often becomes diseased from a man's taking alcoholic drinks. They cause a great overgrowth of the connective tissue of the liver, giving rise to what is known as *fibrous degeneration*. The true liver substance is crushed and killed and what remains is a shrunken, hard, rough mass, well-known to physicians as 'hob-nailed,' or gin-drinker's liver." The action of alcoholic drinks on the respiratory organs is thus described by the same author: "Indulgence in alcoholic drinks often keeps the mucous membrane lining the air passages in a congested state. It thus increases the tendency to colds of the head and chest. There is also a peculiar form of consumption, which is rapidly fatal and is found only in drunkards."¹¹ This is sufficient upon which to establish a mechanism of pneumonia from alcohol in excess. It will be seen that the circulation is obstructed by the "hob-nailed" liver, and although the organs may bear the strain, and naturally adapt themselves to the change for a time, yet ultimately the circulation is thrown quite out of its natural current and equilibrium; and the pulmonary capillaries, already in a chronic state of congestion from alcohol are easily excited by any other cause, as cold, to still further congestion, and pneumonia ensues.

It will not be necessary, in this presence, to say more concerning the "mechanism of pneumonia" from age, malaria, and alcohol. The structure of the lungs, and their functions; the circulation of the blood through them, and through the liver and spleen, have furnished suggestions to make the demonstration. It is admitted that the merest outline has been given here, but when these altered structures, with their consequences, are pursued, as they can be by the medical thinkers who are now addressed, the conclusions to be drawn from them will be perfectly clear. This mode of showing the production of pneumonia from its various causes, and by means of a mechanism from which it may grow; by which it is governed, and by means of which it may be treated, has been given as a contrast to the *indefinite* picture by which it is too often presented, and which may be largely answerable for its even still more indefinite treatment which has heretofore been offered. In every part of its literature, save one, there is a singular want of precision in the study of this disease. Attracted by the rich field which it offers for thought, less attention has been paid to its initial causes proper, and to the therapeutics flowing from them, than these points demand.

For practical therapeutic use, the presentation

of the disease must not begin with a description of its textural alterations, for this is like the commencement of a narrative in the middle of a story, or like the exhibition of half a picture. Its initial cause must be demonstrated and its therapeutics based upon that. While it is difficult not to be influenced by scientific medicine proper, often at too early a period; while there are those who may be too easily carried away by new theories evolved in the laboratory, it must be acknowledged, that sometimes the most useful man is one who does his best to stop the prevailing mortality of a disease by carefully availing himself of, and keeping loyal to, what is already known; combining with this that which may be reasonably expected in the future; and by avoiding theories far-strained, as well as false dogmas. An equally interesting point for the mechanism of pneumonia to grasp and study, would yet lie before us in the future, if a microorganism should ever be found to produce the disease. But this is not yet the case.

About seven years ago Klebs found what he called an ellipsoid coccus, and thought he had traced it to pneumonia. Since that time this microorganism has been studied by others who have variously called it the nail-shaped coccus, the pneumococcus, or the microorganism of pneumonia. Little is as yet known about it, but enough is *suspected* to make it the duty of a physician to medicate the air of a room in which there is a patient having pneumonia, as will be hereafter explained.

CONCLUSIONS FROM THIS PAPER.

1. The predisposing causes, as the name implies, do not produce pneumonia, *de ipso facto*, but before its commencement they have already worked such structural changes in the human body that upon further disturbance of the system a congestion of the numerous pulmonary capillaries is more likely to occur than any other diseased condition.

2. A study of these structural changes, wrought by predisposing causes, gives advantages both in advisory prophylaxis, as well as in treatment.

The following letter from Dr. Wm. C. Welch is a summary of what we know of the relation of bacteria to pneumonia:

My dear Doctor Van Bibber:—At your request I write you a short account of our knowledge concerning the relation of bacteria to the causation of acute croupous or lobar pneumonia.

Not much importance was attached to the results of bacteriological investigations of croupous pneumonia before Friedländer, in 1883, described and obtained in pure cultivation a bacterium which he found in the affected lung in a number of cases of this disease. This microorganism was described by Friedländer as a round or oval micrococcus, possessed under certain conditions of a capsule capable of being stained, and presenting the so-called nail-like growth in gelatine. Friedländer's pneumococcus, as the organism is often called, although most bacteriologists now classify it as a bacillus, was found to be pathogenic for mice and in less degree for guinea pigs

¹¹ Human Body. H. Newell Martin, pp. 131 and 184.

and dogs but not for rabbits. Inoculations of pure cultures into the lungs of susceptible animals produces pleurisy and *lobular* pneumonia, in rare instances *lobar* pneumonia.

The belief which prevailed for a time after Friedländer's discovery that his pneumo-coccus is, if not the exclusive, at least a common cause of croupous pneumonia has not been confirmed by later researches. It is found that the pneumo-coccus, or more properly the bacillus pneumonia of Friedländer, is not so readily identified by means of its morphological and biological properties as was at first supposed to be possible. Other bacteria have been discovered which can be distinguished from it only by careful and laborious procedures. Little reliance, therefore, can be placed upon much of the work apparently in support of Friedländer's views as it is not certain, or even probable, that the observations in many of the cases related to Friedländer's bacillus. However this may be it is certain that this bacillus cannot be demonstrated in many cases of croupous pneumonia, either in the pneumonic exudation, the sputum, or elsewhere. Even the advocates of the causative significance of Friedländer's pneumonia bacillus now admit that it is the cause of only a small proportion of the cases of croupous pneumonia. In my judgment it has not been satisfactorily demonstrated to be in any case the cause of genuine croupous or lobar pneumonia of human beings.

At the present time the chief interest in this connection attaches to another species of bacteria. This species is the micrococcus discovered by Sternberg, in 1880, in his own sputum, and found by him to produce a rapidly fatal form of septicæmia in rabbits—the so-called sputum septicæmia. To this organism Sternberg has given the name of micrococcus Pasteuri. Its relation to croupous pneumonia has been studied with especial fulness and care by A. Fränkel and by Weichselbaum, of whom the former designates the organisms as the micrococcus of pneumonia, and the latter as the diplococcus of pneumonia. In distinction from Friedländer's pneumo-coccus, this organism is sometimes called Fränkel's pneumo-coccus. This second pneumo-coccus—the micrococcus Pasteuri of Sternberg—is present in the exudation and the sputum of croupous pneumonia far more frequently than is Friedländer's bacillus. It is regarded by Fränkel as the sole cause of genuine croupous pneumonia, and by Weichselbaum as the usual cause, the latter author claiming that a small proportion of cases are due to Friedländer's bacillus. The micrococcus Pasteuri has been found as a pure culture in the exudation of cerebral meningitis complicating croupous pneumonia.

It must be admitted that the evidence in favor of the micrococcus Pasteuri being the cause of croupous pneumonia is *stronger* than that in support of Friedländer's bacillus, but it does not seem easy to reconcile with this evidence the fact that the micrococcus Pasteuri has been found in a variety of conditions not associated with croupous pneumonia, viz.: in the normal saliva, in lobular pneumonia, in cerebro-spinal meningitis, in acute endocarditis, and in otitis interna. If this organism be regarded as the cause of these various diseases as well as of croupous pneumonia, the croupous pneumonia loses much of its typical or specific character. Sternberg, Fränkel and Weichselbaum consider that the occasional presence in the normal saliva of the micrococcus Pasteuri is not an obstacle to admitting the dependence of croupous pneumonia upon this organism, but on the other hand renders clearer the etiological rôle played by the accessory causes of pneumonia, such as exposure to cold, bad hygienic surroundings, old age, etc. These accessory causes they urge bring into existence the necessary conditions for the invasion and multiplication of the pathogenic organism.

The two microorganisms which have been mentioned are not the only species of bacteria which have been found in the exudation of croupous pneumonia, but they are the only ones to which bacteriologists are inclined to attach etiological significance in the production of this

form of pneumonia. It is apparent that the evidence is not conclusive that either of the organisms is the infectious agent of croupous pneumonia, certainly no such evidence has as yet been presented as that which leads us to accept the tubercle bacillus, the typhoid bacillus, the cholera spirillum as the cause of the respective diseases in which alone each of these organisms has been found.

Yours very truly,

WILLIAM H. WELCH.

Baltimore, May 2, 1888.

THE TREATMENT OF PNEUMONIA.

This is a difficult subject to approach for many reasons. "Every new remedy almost is tried in turn for pneumonia. It is a disease particularly suitable to speculative medicine."¹² After reflecting upon the manner in which the subject might be presented, it has been determined to do so in a way different from that which has been ordinarily pursued. It is useless to bring prominently forward oft repeated principles of practice concerning which most physicians have long since made up their minds. The subject will be presented for judgment, and therefore reasons will be given for each point of practice made, no matter how trivial it may seem. The larger and the longer one's observation may have been in the management of this disease, the more he will be likely to appreciate, and to be attracted by, what may be termed, the elegancies of therapeutics. It is fatiguing to the mind to enter into the figures of statistics, and as this has been done so often, and moreover, as there are now no new and corrected collections to offer, let it be taken for granted, that those which have already been published, are sufficient; and that they are as correct as they can now be made; although, what can be proved from them, each one's judgment must determine for himself. The only claim which will now be made is that of forty-seven years of observation, and those who may have been co-observers for this length of time, or near it, will recollect that at that time, as it is at present, pneumonia was the disease of the day. It has always attracted attention, and upon its treatment most physicians have based their hopes for usefulness and their expectations for success. The extraordinary appearances of the pneumonic lungs which are presented for pathological demonstration and study, contrast so strongly with the physiological lungs, when displayed, that they never cease to excite wonder and to strike the mind with amazement and dread. No one can forget these appearances, and when a case of pneumonia is under care for treatment, the recollection of them returns, and the physician is burdened with an anxiety which few outside of our profession can estimate.

It has been determined to present the subject of treatment of pneumonia by means of four hypothetical cases. One—a child of eighteen months, or under two years of age. One, a youth twenty-five

¹² Fothergill. *Hand Book of Treatment*, p. 347.

years old, of uncomplicated pneumonia. One case, sixty years of age, complicated with malaria, and one case, of seventy years old, complicated with old age, malaria, and alcohol. These four cases, it is thought, may sufficiently embrace the subject. These ages have been selected, because, according to the statistics, pneumonia is more common before 2 years of age—less frequent between 2 and 20—common again between 20 and 40—less frequent from 40 to 60—again common after 60. Making three distinct periods, early childhood, from 20 to 40, and after 60.¹³

As the point in view is strictly treatment only, in these hypothetical cases, the diagnosis is supposed to have been already made, and the treatment to be commenced immediately thereafter.

Case 1.—An infant between 18 months and 2 years of age. *Directions:* The child to be protected in the best manner possible; to be put in bed, if it will remain there quietly, if not, it should be nursed in the manner in which it will remain most composed, but its position to be frequently changed, so as to prevent the settling of blood in its lungs. The room should be pleasantly shaded and kept quiet, warmed by means of an open fire, and kept at a temperature of from 68° to 70° F. in winter. Its clothing should be slit open in the back at the first visit, so as to get free access to the bare skin without trouble. Its diet should be diminished to one-third of its usual quantity of food. Modify its bath, its amusements and the use of its voice, and in all attention to it, have only the one nurse with whom it will be most quiet in the room. To cry, as well as to talk, is bad for pneumonia.

The question should be now determined what remedies will be used in this case of disease.

1. Commence with a gentle purgative—the transference of a slight irritation to the intestines is a good treatment. *Ol. ricini* is the best, and more easily given when skimmed off of warm, sweetened water, flavored with mint.

2. Antifebrin gr. $\frac{1}{2}$, in solution, in sweetened water; this is intended to gradually diminish the heat of the blood. To assist nature thus far, even with the advanced theories before us concerning the pneumonic fever, is a good practice; if the pneumonic fever runs too high, this will control it.

3. The muriate of ammonia $\frac{1}{2}$ gr. every four hours, to be given alternately with the antifebrin. This salt is better given in solution in weakened and sweetened spear-mint water.

4. Muriate of ammonia gr. 4 to an ounce of whisky, or bay rum. This is to be applied hot on a well fitted linen pad—3 x 4 inches—on the skin over the roots of the lungs, and to be covered by a flannel pad and a well fitted oil silk arrangement; also, the feet may be rubbed with the same solution, the object being to carry off the super-natant heat and thus produce sleep and quiet.

5. To medicate antiseptically the air of the room. Bromine, chlorine, iodoform, carbolic acid, or other substances, in solution, to be placed in the apartment, near the child; where such a medication of the atmosphere will be made most potent for its good. The breathing of a properly medicated atmosphere is the most powerful mechanical mode of treatment. It is as constant, and as long-continued, as life itself. The bromo chloralum, 1 part to 20, answers a good purpose.

6. Repeat the gentle purgative every second or third day.

7. Continue this treatment without intermission for seven to ten days.

Pure pneumonia, in an infant at this age, is frequent, and is sometimes the slightest, and again the most serious of diseases. The statistics, for all classes may be consulted, in order to prognosticate how many cases similar to the one here described may recover. Practically, we may say, that if these seven directions are fully carried out, in good faith, that at least eighty out of a hundred of those cases which occur in private practice, amongst persons in good circumstances, will be cured. This proportion presupposes that the treatment is commenced as soon as the crepitant râle can be detected. This is encouraging.

Case 2.—A youth, 25 years old—uncomplicated pneumonia. *Directions:* 1. To be put to bed at once and follow the same general directions for temperature, shading, and quiet of the room as in the first case.

2. The diet to be reduced one-third of the habitual amount of nourishment ordinarily used, and a proper selection of articles chosen to suit the occasion, but the amount of food should be proportioned to the area of lung involved, if possible.

3. The initial purgative should be a saline. An effervescent saline aperient is the best.

4. Medicate the atmosphere of the room at once.

5. Antifebrin gr. iij to v, or antipyrin gr. 4 to 40 in cool water, and mur. ammonia gr. iij, in hot water, each given every four hours, alternately—one or the other every two hours.

6. Six scarified cups, drawing six ounces of blood, and six dry cups to be applied over the roots of the lungs, with a medicated poultice afterward applied to the cupped surface; when the irritation from the cupped surface has subsided apply the pads wet with the muriate of ammonia and whisky or bay rum to the back. Renew the cupping every three days or oftener, if necessary, with half the quantity of blood drawn. Give the purgative every two or three days, to be given early in the morning preferably. Protect the chest and arms with warm clothing, a flannel Nightingale is the best.

7. Continue this treatment without abatement for sixteen days, so that all trace of inflammation in the lungs may be subdued.

¹³ Loomis. System of Medicine. Pepper p 314.

8. Medicate the air of the room thoroughly.

This latter is a case which would give more apprehension than the first one, because, as a rule, the older the patient, the more serious the pneumonia. This case, like that of the infant, is supposed to be a type case of uncomplicated pneumonia. Like the first one, also, it is supposed to have been recognized at the beginning of the crepitant râle, and immediately thereafter submitted to treatment; with these premises granted, the prognosis is favorable in both cases, and the recovery, by the treatment instituted, should be complete. But it must be emphatically said, for these two cases, that, had they not been thus early recognized and properly treated, the result would have been different; because, from the mechanism of the parts which make up the disease, and the function of the organs involved, it is evident that pneumonia is a progressive disease. It cannot safely be trusted to the efforts of nature amidst the ordinary accidents of life without a proper and a vigorous treatment. From its essential nature it must spread in the lungs if not cared for, and unless stayed, will mechanically get such a lodgement there, as to destroy life as an acute disease, or cause the patient to be an invalid from chronic structural changes.

Case 3. Pneumonia occurring in a patient about 60 years old, complicated with remittent malaria. This case is yet more serious than the other two: the increased age, and the deteriorating malaria, giving their disadvantages to the patient.

Directions. 1. The same general directions as in the first two cases as to rest, temperature and shading of room, exposure of back, extra warmth for arms and chest; but the flannel should be heavier than in the other case. Be still more vigilant about changing positions in bed, and have the cuppings always done whilst in the recumbent posture, and this can be readily accomplished.

2. The effervescing saline aperient. The after opening treatment, in one of this age, may be done by some of the saline mineral waters; they refresh the stomach, and acting as resolvents, actually increase the vigor of the system.

The malarial complication must be met by the administration of quinine. Hypodermic injection is preferred. Six grs. of the alkaloid, or a solution of the hydrobromate, should be injected three times a day for three days; the hypodermic solution of the hydrobromate of quinine is the best. On account of the advanced age a somewhat greater support should be given to the patient; and smaller cuppings must be ordered.

3. *Remedies.* If the temperature is high, give antifebrin somewhat according to the rules and observations of Dr. G. Walter Bart,¹⁴ 5 to 15 grs. every four hours, alternately with muriate of ammonia grs. iij in hot water, also when the cupped

surface will permit, apply the muriate of ammonia solution 20 grs. to the ounce of whisky or bay rum, covered with the flannel and oil-silk pads, as before directed.

4. Medicate the air antiseptically. Upon this the greatest stress is to be placed.

5. Give the saline aperient water every second or third day.

6. Continue this treatment without intermission for from sixteen to twenty days.

This case is more serious than the others, and the statistics of mortality, for all classes, would give a large percentage of mortality for the class of which this is intended to stand as a type. The treatment, however, has been carefully selected, and if fully carried out in good faith, in private practice, amongst persons in good circumstances, it will be found that a large number recover.

Case 4. Patient 70 years old, complicated with old age, malaria and alcoholism. The number of years being given, and the term old age applied, presupposes that this latter is premature on account of the malaria and alcohol.

Directions. 1. The same general plan of treatment would be advised for this patient as it regards the appointments of the room, the clothing, the cupping, postural changes, etc.

2. The same remedies to be used, *i. e.*, the antifebrin, in capsules, the carb. ammonia—in place of the muriate—or alternating with it. Larger diluents of light mineral waters—the muriate of ammonia pads, the antiseptics of the air, the hypodermic use of quinine. The modifications to be made in this case are for the alcohol habit, and the age; these are important on account of the supposed long continued habitual use of alcohol—it cannot be suspended abruptly—but whatever preparation is selected to carry on the habit, it must be largely diluted with water; wine-whey, or weak whisky and water are the best.

In order to show the practical application of the plan of treatment which has been suggested, it will be necessary to recapitulate the articles and explain, somewhat in detail, the *modus operandi* of the several remedial means employed. The rest, warmth, postural changes and external applications, require no further mention. Much stress is laid on cupping over the roots of the lungs, between the shoulders, or more particularly still, between the third and eighth dorsal vertebræ, and for this reason. It will be remembered that the lungs are pedunculated organs. Together with the heart they can be taken from the body entirely by the severance of their roots. They are internal, but in another sense they are far removed organs; the length of the pedicle giving them their peculiarity. In this respect they have their analogues in the testes, the ovaries, the small intestines and other pedunculated organs. If the circulation in the pedicle be obstructed, the pedunculated organs suffer in consequence. *Whatever enters into the*

¹⁴ See Practitioner, October, p. 294.

lungs, or is returned from them, must pass through the roots. It must therefore be of the first importance to keep their circulation through the roots open and free. Cupping over the roots is the best known means to effect this purpose according to the laws of counter-irritation over affected parts. The argument that there is no vascular or other connection between the roots of the lungs and the skin must be laid aside by the experience in the matter. Besides this, the actual abstraction of the blood, and the holding of a certain amount of it in one place *pro tempore*, is a means of derivation relieving local tensions, and when employed for this purpose, and with this aim in view, the cupping should be done, if this is possible, at the moment when the tension is greatest. It is thus a means of controlling, or at least of moderating the effects of high arterial action during fever. *Again, cupping is most valuable from the relief of pain, and feeling of oppression, which it affords.* There is no one remedy more valuable, in the treatment of pneumonia, than frequent small cuppings, applied with judgment, at the proper times, according to given principles. By arranging the clothing as described, it can be done without inconvenience, and without removing the patient from the horizontal position.

If we exclude the initial opening dose, the medicines recommended are only five in number.

The first, the muriate and the carbonate of ammonia, have been selected because they answer more of the indications required than any medicines which have ever been proposed. Of the muriate, it is said that by its own peculiar properties it acts upon the circulation in the capillaries and assists to unload them when they are engorged. When given in hot water it is a resolvent, a general expectorant, and a diaphoretic. It seems, upon practice, to act in the way described, and, if persisted in, to meet more of the indications, and to do more good, than any other medicine which has been tried. When flavored with spearmint water it is acceptable to children, and when given in hot water does not produce nausea in older persons. The carbonate of ammonia is more stimulant than the muriate, and it is also a resolvent, and is a remedy which seems to prevent embolism or the coagulating or engorging of the blood in the capillaries. Again, used in another way, for inhaling, carbonate of ammonium is so volatile that it will carry with it other remedies and not destroy their effects. Placed in a large, wide-mouthed, well stoppered bottle, it may be charged with carbolic acid, chloroform, thymol, or any of the antiseptics without injuring their effects, and in this way, inhalants, besides the medication of the air in the apartment, may be used in pneumonia with good effect. This inhaling bottle should be large, and used efficiently by means of deep inhalations.

Antipyrin and antifebrin are comparatively new

remedies, yet, so far as their effects have been observed, they seem to control fever by diminishing the heat of the blood. Their effects have been thus compared and placed in juxtaposition:

Antipyrin lowers temperature in half an hour. Effect lasts two hours. More diaphoretic. Depressing after-effects. Cerebral sedative. Dose 15 to 30 grains. Tolerance from continued use.	Antifebrin lowers temperature in an hour, or more. Effect lasts six hours. More diuretic. No after-effects. Cerebral vaso-motor muscular stimulant. Dose 5 to 15 grains. Tolerance from continued use.
--	--

These are valuable remedies in pneumonia. But antifebrin is the best.

Of digitalis, veratrum viride, strychnia, strophanthus, and many other remedies proposed, much can be, and has been, discussed, concerning their action connected with fever and its defervescence, and heart failure; and they may be valuable remedies in the hands of those accustomed to their use—but their therapeutics are not sufficiently settled to warrant their exhibition in any system of treatment or cure.

It is interesting and instructive to study pneumonia in its mechanical aspect, if it is only to grasp the problems of the phrase "heart failure," which is so much used by those who have written of its treatment. Heart failure is *the most frequent, as well as the most immediate, cause of death.* Its mechanism is complicated. Reduced to a few principles it may be said: *First*, In pneumonia there is diminished lung area, and consequently a diminished supply of arterial blood. *Secondly*, the pressure of the exudation and engorgement in the swollen substance of the lung is the obstacle. *Thirdly*, the amount of blood which arrives in the heart has to be forced through these obstructions. This brings a heavy weight upon the right ventricle. *If this is continued the heart must fail.* What course should treatment pursue? Will it force the heart by digitalis; weaken it by veratrum; strengthen it by strophanthus; drive it harder by alcohol? Or, would it be better to endeavor to ease the heart, and to divert its force by cupping? The force is in the current, as the stream of blood arrives, and the strain is on the right side, on the ventricle, to drive the blood through the obstructions.

Repeated and repeated cuppings, in quick succession, it may be, are the safest and the best diverting means which a study of this fearful condition can suggest. To open a vein just at the supreme moment might be better, but there are few physicians who would not consider the cuppings a more safe teaching—and possibly, unless very sure of the moment, a better practice.

The four cases introduced to explain the plan of treatment recommended were hypothetical, and it remains finally to make a summary of them. When the two first cases were reported recovered it was not surprising. Their cases were diagnosed early and treatment commenced immediately; it

was thought fair and proper that they should recover. The third case, however, might be considered a test of good management from the beginning. This case, according to statistics, had less than an equal chance. If a mistake had been made by an indefinite treatment, it would have jeopardized the life of the patient at once. But the fourth case, 70 years old, with malaria and alcoholism, would not recover according to statistics. During a course of an indefinite *individual treatment* something might have been done which would prove injurious to the patient; but by the plan here proposed, *founded upon the mechanism* of the disease, it can be safely assumed that nothing injurious would be done; but, with the frequent cuppings to prevent heart failure, the supporting diet and personal hygiene; besides the continued medication of the air, and the inhaling of antiseptics; with the two resolvent ammonias and the antifibrin; with the antiseptic resolvers applied hot externally, together with a good moral support, we may leave this desperate case as doubtful, yet not without hope.

No mention has been made in the course of treatment of the pneumonia "*foudroyant*," which kills the patient almost like a thunderbolt, because these cases are scarcely recognized before the overwhelming catastrophe occurs. What should be promptly done in these cases is general venesection if one is sure of his case, but at any rate extensive cupping, to prevent the overwhelming congestion. At the same time medicate the air of the room, and use stimulating inhalants, with a view of reviving the patient, to divert the blood by again and again frequent cupping, so as to preserve the heart; and if these, happily, may stay the progress of the disease long enough, then, to commence the plan of treatment recommended.

CONCLUSIONS.

1. The mechanical interference to the circulation and aeration of the blood in the lungs is the main symptom to be combated in the treatment of pneumonia.
2. It requires prompt, urgent and aggressive treatment in the earlier stages of the disease, and this mechanical relief can only be afforded by decided local depletion.
3. Even after the effusion into the parenchyma has occurred, it requires still further local depletion to preserve the heart, and keep open the circulation in the roots of the lungs.
4. Pneumonia admits of study by mechanical as well as vital principles, and its pathology may be elucidated and its treatment improved by study in these directions.

THE CALIFORNIA BOARD OF EXAMINERS, after March, 1891 will require all who seek to practice medicine in that State to be graduates of a three-year graded medical college.

INTRAPERITONEAL RUPTURE OF BLADDER.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, Ohio, May 8-11, 1888.

BY H. H. GRANT, M.D.,
OF LOUISVILLE, KY.

Abdominal surgery, though more than fifty years a thrifty identity, has in the last half a decade assumed such a position, through the boldness and success of skilled operators, as to surpass beyond competition all other departments. Even the newly invaded region of the brain, with its brilliant record, is unmentionable in comparison.

Though among the rarer lesions for which abdominal section is appropriate, the still rarer comparative success after the operation lends an interest to the few recorded recoveries after laparotomy for intraperitoneal rupture of the bladder, beyond numerical desert.

In making report of a successful suture of intraperitoneal rent, I venture to call attention to the history of the operation, now about ten years old. Though the classical opinions expressed by Sir William MacCormac,¹ together with the comments and amplifications by Mr. T. Holmes,² cover pretty well both the theoretical features and the practical details of the condition and operation, yet besides the reports of several operations since Mr. Holmes' paper, there remain for elaboration and systematization many salient and important points.

It is a remarkable fact that, though indefinite reference to the propriety of attempting suture of the bladder after laparotomy for rupture has been made by Gross,³ Larrey, Cussach and others, yet, except the suggestions of Holmes in his "*Principles and Practice of Surgery*" in 1875, nothing like a definite position is mentioned in any textbook on surgery published prior to 1880. Up to these dates the treatment of such condition is dismissed with a few words as to a hopeless expectancy. In a full review of the subject as late as 1886, Mr. Rivington⁴ declares that up to that time intraperitoneal rupture of the bladder, however treated, had been uniformly fatal, excepting only Walter's⁵ case of laparotomy without suture, at Pittsburg, in 1862.

This is perhaps the only laparotomy for the lesion under consideration until Mr. A. Willett,⁶ in 1876, closed by suture of the bladder rent and abdominal wound. It appears that to Mr. Willett is due credit not only for priority in operation, but also in detail of suture of the vesical rent—as he disclaims⁷ knowledge of previous suggestion pointing out the procedure. Interrupted silk su-

¹ London Lancet, December 11, 1886.

² London Lancet, July 23, 1887.

³ MacCormac. London Lancet, December 11, 1886.

⁴ Heath's Surgical Dictionary, 1886.

⁵ Med. and Surg. Reporter, Philadelphia, February, 1862.

⁶ St. Bartholomew Hosp. Rep., 1876, xii

⁷ Holmes. Lancet, July 23, 1887, p. 151

tures were used in the bladder twenty-nine hours after injury. Urine escaped, however, through the rent, and death from peritonitis and shock took place in twenty-three hours. In 1878 Mr. Christopher Heath,⁸ forty hours after accident, closed an intraperitoneal rent with continuous catgut suture. Leakage and extravasation occurred, and death on the sixth day.

In 1883 Pilcher,⁹ commenting on these cases, describes with references to Vincent and Stein, the

operation afterward successfully done by MacCormac¹⁰ in two cases in 1886, and now recognized, with slight modification, as the perfect technique. In a table prepared by Sir Wm. MacCormac,¹¹ published in May, 1887, explicit and concise details are given of the history, symptoms, treatment and result in all the cases of intraperitoneal rupture, sixteen in number, reported up to that date. I take the liberty of presenting a new table made up in part of MacCormac's, with fuller de-

No.	Operator and Reference.	Age.	Time after Accident.	Symptoms.	Lesion in the Peritoneum.	Treatment.	Result.	REMARKS.
1	Wm. T. Bull, <i>Annals of Surg.</i> , Vol. 1, No. 1.	46	13 hours.	Characteristic.....	3¾ inch rent in posterior wall.	8 Lembert sutures; catheter tied in bladder; no drainage.	Died in 7 hours.	Fracture of pelvis; careful antisepsis.
2	Jos. M. Fox, <i>Phil. Med. News</i> , Dec. 10, 1887.	38	19 hours.	Characteristic.....	2½ inch triangular rent.	15 Lembert catgut sutures; catheter tied in; no drainage.	Died in 42 hours.	Post-mortem showed sutures intact; careful antisepsis.
3	C. Heath, <i>Med. Chir. Trans.</i> , No. lxii.	Adult.	40 hours.	Tense belly, bloody urine by catheter.	Intraperitoneal rent (not described).	Neither catheter or drainage are mentioned; continuous suture of catgut; not further described.	Died on 6th day.	Post mortem showed sutures had given way (probably on 3d day); treatment probably not fully antiseptic.
4	Sir W. MacCormac, <i>London Lancet</i> , Dec. 11, 1886.	33	19 hours.	No shock; 95 oz. of blood by catheter; great pain.	4 inch rent in bladder, far back, not easy of access.	16 Lembert silk sutures, with a few sutures superficial of catgut; catheter every 4 hours; drainage-tube in abdomen.	Recovered.	There was no peritonitis, and patient recovered without a drawback.
5	Sir W. MacCormac, <i>op. cit.</i>	37	27 hours.	Neither shock nor symptoms; fluid in abdomen.	3 inch rent.....	12 Lembert silk sutures.	Recovered.	Neither catheter nor drainage. No peritonitis.
6	A. F. McGill, <i>Lancet</i> , 1886, xxi, 972.	54	68 hours.	Insensible for a time. Peritonitis.	4 inch rent from apex to fundus.	9 chromic catgut sutures.	Died in 17 hours.	Catheter nor drainage mentioned; post-mort. showed bladder wound firm; no fluid in peritoneum.
7	C. J. Symonds, unpublished.	47	7	Collapse, great pain, adhesions over hypogastrium, blood by catheter.	Y-shaped rent, partly intra- and partly extra-peritoneal.	12 Lembert sutures.....	Died on 7th day.	Drain nor catheter mentioned; post-mortem, bladder leaked; pelvic fracture; secondary laparotomy for peritonitis.
8	T. P. Teale, <i>Lancet</i> , June 24, 1887.	25	18 or 20 hours.	Pain, no urine by catheter, dullness in flanks.	1 inch rent in fundus.	Perineal section and drainage; laparotomy; 6 catgut sero-serous sutures.	Died in 19 hours.	Post mortem, bladder water tight, no peritonitis.
9	Mr. Halstrom, <i>Lancet</i> , June 28, '88.	21	13 hours.	No shock.....	Rent 1½ inches....	Catheter 1st day: 9 Lembert sutures.	Recovered.	No peritonitis, no drainage. Irrigation practiced with boric acid solution.
10	A. Willett, St. Bartholomew Hosp. Report, 1876, p. 209.	48	29 hours.	Shock, pain, bloody urine by catheter. Peritonitis.	Transverse rent 3½ inches.	Interrupted sutures (Silk?).	Died in 23 hours.	Leakage of bladder wound. No mention of drain or catheter.
11	T. Holmes, <i>Lancet</i> , July 23, 1887.	24	6 hours.	Pain; blood-stained urine on deep catheterization; point of catheter felt in abdominal cavity.	Rent 2 inches.....	8 sero-serous sutures of carbolized silk; perineal section uncompleted.	Recovered.	No abdominal drain; carbolic antisepsis; no peritonitis.
12	E. L. Keyes, <i>N. Y. Med. Record</i> , Dec. 24, 1887.	22	22½ hrs.	Incipient peritonitis; a little bloody urine by catheter; characteristic symptoms.	Rent 1½ inches backward.	Antiseptic care; 9 Lembert sutures of silk; permanent catheter; glass drainage-tube.	Died in 18 hours.	Post-mort., bladder wound intact; death from shock and alcoholic depression.
13	H. O. Hitchcock, <i>Pittsburg Med. Review</i> , March, 1888.	34	15 or 18 hours.	Shock; free fluid in cavity of abdomen; could not urinate; 11 pints by catheter of bloody urine from abdominal cavity; no peritonitis.	Rent 2 inches. peritoneal apposition of edges not entirely accomplished.	Carbolized catgut suture, not defined as to introduction; antiseptic irrigation, but not complete; permanent catheter.	Died on 2d day.	No drainage; vague report of post-mortem.
14	H. H. Grant, unpublished.	19	5 hours.	Shock; bloody urine by catheter; empty bladder later; slight bulging in perineum but no urine on aspiration.	Rent 2½ inches. Fracture of horizontal ramus near symphysis.	11 carbolized silk sutures, Lembert, complete antisepsis, catheterization every two hours; drainage-tube of rubber.	Recovered.	Drainage-tube removed on 6th day; no peritonitis, no result from fracture.

⁸ *Medico-Chirurg. Trans.*, vol. lxii.

⁹ *Treatment of Wounds*, p. 370.

¹⁰ *Op. cit.*

¹¹ *Brit. Med. Jour.*, May 14, 1887.

tails supplied to some of his cases, published since his report of them, and adding four cases treated subsequent to his paper. I have removed from comparison cases Nos. 2, 5, 9, 10, 11 and 15 of his table. In Nos. 2, 11 and 15 (the latter Walter's case at Pittsburg) no sutures were used in the bladder, and in Nos. 5, 9 and 10 the injury was extraperitoneal before abdominal section. To the remaining ten cases, seven of which were fatal, I add 4—one by Mr. Holmes,¹² recovering; one by Dr. E. L. Keyes,¹³ died in eighteen hours; one by H. O. Hitchcock,¹⁴ died on second day; and one by the writer, recovering.

The history of this case is briefly as follows:

Case.—Jesse Minor, white, æt. 19 years, weight 135 lbs., fell from the shaft of a light cart (weight 400 lbs.), the wheel passing over pelvis and hypogastrium—from right pelvic spine—leaving only a slight bruised mark on the skin. Accident at noon April 2, 1888. After lying still about fifteen minutes the boy stood up without assistance, tried to pass water, but failed, though his bladder had not been emptied since 6 A.M. Prof. S. E. Woody saw him in about twenty minutes after the accident, elicited the above history, passed a catheter and drew off about 2 ozs. of bloody urine. A hypodermic needle withdrew no urine from the perineum. There was intense burning pain in hypogastrium and severe shock. Dr. Woody recognized the existence of intraperitoneal rupture. I saw the patient with Dr. W. at 1:30. A catheter introduced at this hour—about sixty minutes after previous catheterization—withdrew only a few drops of urine, still bloody. The pain, though somewhat controlled by the large doses of morphia given by Dr. Woody, was still severe on motion; pulse good, but countenance indicated shock. Fluctuation was not made out in abdomen, though some dulness existed on percussion over the flanks. The ensemble of the symptoms indicating explorative section of the abdomen, the boy was removed to his home, a mile away, the family advised of his condition, and preparation made at once for laparotomy.

Operation.—At 5 P.M., after examination under chloroform, with the concurrence and assistance of Dr. A. M. Cartledge, the operation was made, five hours after injury. Dr. S. E. Woody administered chloroform, and Mr. Woody, of the class of the Kentucky School of Medicine, assisted us. The pubes were shaved and washed quickly with warm soap and water, and then with a sublimate solution, 1:1,000; 3 per cent. carbolic solution for instruments and thorough cleansing of our hands and arms to elbows; towels wrung out in sublimate solution 1:1,000 were put about the site of operation, and a gallon of hot Thiersch solution prepared to irrigate the cavity. An incision in the median line from the pubes 3 inches

in length exposed the peritoneum, bruised and discolored, but unruptured save in one or two minute spots, through which the bloody water from the cavity oozed out. The cavity was quickly opened and $\frac{1}{2}$ gallon of bloody urine poured out. The incision was now extended to the umbilicus. The introduction of the finger in front of the bladder discovered a loose fragment of bone about the size of a large chestnut, evidently crushed off the horizontal ramus of the pubes. This was not disturbed. Dr. Cartledge now passed a sound into the bladder, and I could presently find its point emerging through a rent in the fundus, $2\frac{1}{2}$ inches in a transverse direction. The cavity of the bladder could be easily explored by the finger through this rent.

The abdominal cavity was washed out with Thiersch solution and, while the bladder was held up by a stout catgut ligature passed through the peritoneal coat behind the rent, I easily introduced eleven sutures of carbolized silk—rather coarser than would have been preferred—after Lembert's method, beginning a little beyond the end of the rent and drawing together the peritoneal investment of the bladder beyond both extremes of the tear. This part of the operation, done with an ordinary curve-pointed needle without a holder, was accomplished with unexpected facility. The bladder was not tested by injection for want of a proper syringe. The cavity of the peritoneum was again carefully irrigated with hot Thiersch solution, and sponged dry with mops of absorbent cotton. The wound was closed with deep sutures of silk passed through the skin, muscles and peritoneum. Superficial sutures of catgut closed the wound around a drainage-tube of soft rubber, introduced by Dr. Cartledge behind the bladder. Iodoform was dusted over the line of sutures, and bichloride gauze covered with absorbent cotton and bandage completed the dressing. The time occupied in the operation was about one hour.

The patient reacted promptly from the chloroform, and spoke intelligently in a few minutes. A hypodermic injection of $\frac{1}{3}$ -gr. morphia was administered, and he was left in the care of Mr. Woody, with instruction to introduce the catheter every two hours. He spent a fair night, with almost no pain. About 14 ozs. of urine were drawn in eighteen hours. At 8 A.M. his pulse was 115, temperature 99°. He was carefully watched and fed, and the catheter used every two to four hours as time went on, Mr. Woody and Mr. R. C. Telly, my private student, also of the class of the Kentucky School of Medicine, remaining with him alternately night and day. His temperature went to 100° but once—on the ninth day, from constipation—returned to normal after a free evacuation in response to sulphate of magnesia.

The drainage-tube was aspirated with a syringe daily for five days, never yielding over 1 drachm of sweet serum. It was removed on the sixth day.

¹² Op. cit.

¹³ N. Y. Med. Record, December 24, 1887.

¹⁴ Pittsburg Medical Review, March, 1888.

The wound united throughout, except around the tube, by first intention. The patient sat up on the fourteenth day; catheterization was discontinued on tenth day. The fracture of the pelvic ramus gave no trouble, and has occasioned no symptoms. I present the patient to speak for his recovery as complete.

In comparing the various methods of detail in the operation I shall return presently to one or two features in the steps taken in this case. The briefest report of the recorded operations I can make is in a reproduction of the table I have prepared. Fourteen cases are recorded in which the complete steps of laparotomy, intraperitoneal suture of the bladder, and closure of the abdominal wound were practiced. In some the catheter was tied in the bladder, in others repeated catheterization was practiced, and in one or two no steps were taken to drain the bladder. Abdominal drainage was practiced in the majority of cases. Of the total five recovered and nine died.

As a duty of the very highest practical importance bears upon us the obligation of determining, out of a comparison of results, which treatment promises most. Three methods are before us. The plan of inaction, with merely drainage by the catheter, recommended as safest by Heath,¹⁵ after failing in his operation, must, in the light of present knowledge, be condemned as unsurgical and not to be entertained. We will consider laparotomy without suture; laparotomy with suture to external wound; laparotomy with closure of bladder rent.

It will be noticed from the table that no case of recovery presented any peritonitis, which of itself speaks volumes for the safety of the operation under antisepsis.

Notwithstanding the success of Walter's case, treated by the first method, there was severe peritonitis, besides the other reported cases, one by J. Duncan¹⁶ and one by Sonnenberg¹⁷ died on the 3rd and 4th days respectively of intense peritonitis. Moreover, most frequently the rent is so large, or occupies such a site in the bladder, as to render the prevention of seepage of urine into the peritoneal cavity impossible by any form of drainage. Besides, it is difficult to see any advantage to accrue from leaving the wound unsutured after the belly is sewed up as in Walter's case. The presence of carbolyzed silk sutures introduced by the method of Lembert, if not absolutely harmless, are a thousand times safer than extravasation of urine, and, if they occasionally, or even in two-thirds of all cases, fail to accomplish the object of their introduction the condition is no worse than those before. Nay, it is much better, for every hour before the extravasation nature is throwing a breast-work around the parts she desires to protect, and if the stitches do yield on the 3d or 4th

day the damage will be certainly less disastrous.

With reference to the second method referred to favorably by later writers, notably Wyeth,¹⁸ as appropriate for intraperitoneal rupture as well as after extraperitoneal supra-pubic section, a diversity of opinion is likely to prevail. The conditions after supra-pubic lithotomy are more favorable to convenient and successful suture of the bladder than in cases of rupture; yet the results are certainly less favorable in cases so treated. In his "Observations on Supra-pubic Lithotomy"¹⁹ last year, Sir Wm. MacCormac says: "Schmitz has collected fifty-seven cases of suture of the bladder; forty-seven recovered, and eight died.

The bladder wound healed by first intention in seventeen cases. The permanent catheter was used twenty-three times; eight times the wound united by first intention. In thirteen cases the catheter was not used; of these only three united by first intention. Twenty-three time catgut was employed, with only four successful results. In ten of the seventeen, where union took place by first intention, the mucons membrane was not included in sutures; in five no statement is made whether or not; in two, it was included; when the sutures gave way, this happened generally on the 4th day. By this time the danger of infiltration is mainly over."

These facts indicate that about one-third of cases of suture hold permanently, in the remaining cases the wound re-opens. Though, in intraperitoneal rupture the conditions are not quite so favorable, and though it is particularly true that the lapse of two or three days is not so much a safeguard against infiltration as under the conditions referred to by Schmitz, yet his conclusions are highly pertinent to the subject. In the same paper MacCormac gives statistics of the suprapubic operation without suture, with mortality of 24.4 per cent.; with suture the mortality is 35 per cent.

In view of these figures, which represent facts, it is perhaps wise to select a medium course. Under such conditions, as considerable period since the injury, with unfavorable local and constitutional indications with irregular lines in the rent, it would be preferable to stitch the tear to the abdominal wound, fill the incision with iodoform gauze, and drain both by catheter and tube. Under most ordinary conditions, and especially when the rent is too far back to admit of reaching the abdominal incision, the third method is appropriate. In a private communication, Prof. J. A. Wyeth mentions a case under his observation in which the bladder rent was closed, and then, for safety, the bladder attached to the abdominal wound. The cut, occurring during ovariectomy, did re-open, but infiltration was prevented by the patient recovering.

¹⁵ Op. Cit.

¹⁶ Lancet, 1886, vol. ii.

¹⁷ Centralblatt für Chirurg. 1885.

¹⁸ Text Book on Surgery, 1888. Page 566.

¹⁹ British Medical Journal, March 12, 1887.

Diagnosis. All experienced observers on abdominal surgery are in accord as to the great advantages of an early operation. The time *par excellence* is in the first eight or ten hours. Shock after such an injury does not subside, but deepens with the growing gravity of the condition. Though case No. 7, of MacCormac's table, operated on twenty-seven hours after accident recovered without peritonitis, yet in Walter's case peritonitis appeared in ten hours, and in most recorded cases indications of inflammation were found at the operation.

Symptoms. Though the symptoms are usually characteristic; clear history, great pain, severe shock, desire to urinate with futile attempts, perhaps little bloody water by catheter, and at times catheter can be felt high up in abdomen—yet occasionally the condition is greatly obscured. In Keyes' case, though the patient was seen in forty minutes after the accident, the nature of the condition was not suspected for fifteen hours. In neither of MacCormac's patients was there shock, and one presented so little distress that he was referred to a dispensary as an out-patient for the first day. Most writers on the subject, refer to the rarity of intraperitoneal rupture. Comparatively, this is true, but I am inclined to believe the infrequency of reports of such condition is due to its being often overlooked. In the *N. Y. Medical Record*, 1888, Dr. M. Singer, of Galveston, reports a case of a man 27 years old, admitted to hospital ten or twelve hours after injury from a kick in the abdomen, catheterization frequently repeated in fifty-four hours preceding death after admission, always found plenty of urine.

Autopsy showed an intraperitoneal rent three inches in length. Attention being drawn to the treatment by recent success, I predict much more frequent reports. Prior to 1886, 3 exploratory laparotomy for rupture, are reported. During 1886, 4 exploratory laparotomy for rupture, are reported. During 1887, 5 exploratory laparotomy for rupture, are reported. Thus far, 1888, 3 exploratory laparotomy for rupture, are reported.

In view of the pretty well established belief that laparotomy of itself, done under careful antiseptic precautions, adds but little to the gravity of any grave condition, it is right to urge that when symptoms strongly suggest rupture of the bladder, and particularly when aspiration of the perineum discloses no infiltration an exploratory operation should be done without delay.

But little is to be added to the conclusions of MacCormac and Holmes as to treatment. Clearly the bladder-wound should be closed after complete cleanly antiseptic irrigation of the abdominal cavity. This irrigation can be most safely done with the Thiersch solution (boracic acid 12 parts, salicylic acid, 2 parts, water 1000 parts), freely and carefully used to remove all contaminating taints. The wound should be approximated with silk

sutures—after Lembert's method. The silk should be carefully carbolized, and of a fairly firm texture, introduced not farther than one-fourth inch apart, cut short and abandoned. Nothing will be lost by washing out the bladder after suture with the Thiersch solution. Both the best of the suture and antiseptic irrigation of the bladder are accomplished in this way. Four ounces is enough to employ. If any leakage appears from such amount of distension, it should be at once looked after. It is true such a step takes a little time, but it is not ill-spent, if it discovers a faulty suture through which a fatal seepage may take place.

The question of abdominal drainage is not decided. It is open to objection on the ground of admission of septic germs, and the weakening of the abdominal walls. The first can be avoided by covering the tube with antiseptic dressings, and carefully, practicing aspiration, and the second by withdrawing the tube in four to six days. By aspiration of the drain all accumulation can be evenly removed, with the risks of absorption of such septic material as may accumulate in the cavity.

Perineal section for the purpose of drainage is condemned, both by MacCormac and Holmes, as not only difficult, upon the empty bladder, but a useless and dangerous complication. When suspicion of urinary infiltration in the prevesical space complicates the diagnosis, aspiration through the perineum, with a long needle, will indicate the condition.

With regard to catheterization, I cannot put the slight risks of the occasional introduction of a soft aseptic catheter, in comparison with the immense advantages of rest of the bladder and prevention of over-accumulation of urine and straining after suture. Though perhaps after the fourth day the patient may be permitted to relieve his bladder in the natural way, even then he should carefully urinate every two or three hours, avoiding all forced contraction of abdominal muscles or of bladder walls.

Refreshing the edges of the rent is wholly unnecessary when the approximation is made by the sero-serous method of suture.

Of antiseptics it is useless to make other mention than that the protection it offers should be secured to every patient by the most skillful and unremitting care.

DR. H. O. MARCY, of Boston: Within the last two years I have had two cases of injury to the bladder which should be put upon record. They were not ruptures from external causes. One was a case in which I found, to my surprise and sorrow, that, while operating upon a large uterine myoma, I had made an incision of from 1 to 2 inches into the bladder. I sutured it together, and union took place. In repairing the rent, I united first the edges of the mucous mem-

brane, and then the overlying structures, with fine tendon sutures. The second case was that of a child of 2 years of age in which there were two openings. I succeeded in closing them, followed by complete cure. All this helps to contribute interest to the subject, and I am sure we are under obligation to Dr. Grant for his demonstration of the subject, for bringing his patient so long a distance to exhibit the result.

GASTROSTOMY; WITH THE REPORT OF A CASE.

BY MILES F. PORTER, M.A., M.D.,
OF FT. WAYNE, IND.

Carl Z., æt. 19 years, German, family history unimportant. Four months before his admission to the Ft. Wayne City Hospital, while yet in Germany, during a drunken spree, he swallowed some "browish-looking fluid" which "burned his throat at the time," since which he has had gradually increasing difficulty in swallowing. He entered the hospital Sept. 9, 1887, when an examination by his physicians, Carl Proegler and Howard McCullough, revealed the existence of an organic stricture of the œsophagus, commencing at the level of the cricoid cartilage, and extending downward about 1½ inches, rendering the passage tortuous and admitting of the passage of no instrument except an elastic urethral bougie; the largest size of this which passed being No. 16, Am.

Repeated efforts to pass olive and acorn ivory-tipped whalebone bougies failed, even with tips of smaller diameter than the elastic bougie passed. Deglutition of liquids and semi-fluids only was possible, but exceedingly slow and difficult. Regurgitation often occurred, and attempts to swallow were accompanied by severe fits of coughing. Notwithstanding the repeated passage of bougies, the stricture grew tighter, deglutition even of fluids became almost impossible, the patient lost strength and weight, and was crying with hunger, when on Dec. 4, 1887, he was advised by his physicians to have the operation of gastrostomy performed. Having gained his consent they requested me to operate, which I did in a room prepared by fumigation with sulphur for 18 hours, thoroughly aired, and supplied with new bed and bedding. I was assisted by Drs. H. McCullough and Carl Proegler, and there were present Drs. Dills and McOscar, a nurse, and the matron of the Hospital.

The patient, having received a bath and clean clothing, was etherized, when his abdomen was washed in a 1:1000 solution of corrosive sublimate, and an incision three inches long was made parallel with and an inch below the costal cartilages of the left side, dividing the muscles—including the outer edge of the rectus—and fascia down to the peritoneum. Forceps were applied to bleeding

points, the peritoneum hooked up and divided on a director the full length of the wound. The greater end of the stomach—which organ was much contracted—together with the lower border of the liver now presented, when the anterior wall of the stomach was drawn out and two threads of black silk were passed parallel and about three-eighths of an inch apart through the peritoneal and muscular coats, by which the organ was held in position by Dr. McCullough while the operation was being completed. Two stitches were passed at each end of the wound, including the parietal peritoneum and all structures of the abdominal wall. Two more were now passed, one above and one below, working toward the centre, including the same structures and also the outer coats of the stomach, after which six sutures were passed on each side of the wound, including the outer coats of the stomach, the parietal peritoneum and skin. All the sutures were now tightened, in the same order as placed, cut short, the wound washed, dried, dusted with iodoform and covered with six layers of sublimated gauze and a generous supply of absorbent cotton secured by a bandage pinned snugly around the body. No ligatures were required. All stitches, 18 in number, together with the guide-threads, were of iron-dyed silk. The guide-threads were of course allowed to remain until the stomach was opened.

The operation occupied less than an hour, and was followed by only slight shock, from which he reacted nicely, the pulse being 76, respiration 26, and temperature 100.5° F. the next morning—18 hours—after the operation.

All went well until the end of 40 hours, when the cough, which had troubled him somewhat ever since his trouble in swallowing commenced, grew worse, respiration became more frequent, the pulse 110, and temperature 102.2° F. An examination revealed a broncho-pneumonia of the lower right side, and showed the wound dry, with no evidence of peritonitis. Up to this time the patient had been taking milk, champagne and brandy *per os*, for, as is usually the case, he had less difficulty in swallowing after the operation; but as efforts at deglutition always excited the cough, enemas were now substituted, and hypodermatics of morphia, grs. ¼, given to quiet the cough, which caused pain in the wound. Fomentations were applied to the chest.

The patient gradually grew worse until, at 3 P.M. of the 7th, 48 hours after the operation, the temperature was 103° F., pulse 142 and feeble, respiration 50 with marked cyanosis, and death was looked for by both of my colleagues and myself. We now administered 8 drops of Squibb's fl. ext. of digitalis, hypodermatically, with brandy; ordered fomentations and enemas continued, and 10 drops of digitalis every three hours *per os*, while the morphia was discontinued on account of the cyanosis, though it had produced no pronounced

symptoms of narcosis. Much to our surprise the patient improved so that on the 8th, at 4 A.M., the pulse was 126 and much stronger, temperature 101° F., respiration 38, and cyanosis much diminished. At 3 P.M. of the same day, though the temperature had risen to 103° F., yet the pulse had improved, falling to 122 with increased strength, respiration 49 and cyanosis still diminishing. A hypodermatic of morphia ($\frac{1}{4}$ gr.) was now given for cough, the dressing removed, and stomach opened, by puncturing with a tenotome, and a No. 10 French elastic catheter introduced and fastened with adhesive strips. The digitalis and enemas were now discontinued, stimulants and nutriment being given by injection through

The enemas were well retained throughout, the bowels moving first on the sixth day.

The patient gained in strength and flesh and continued to feed himself both through the fistula and in the natural way, being able at times, especially in the early morning, to swallow better than at others, though the stricture grew tighter and tighter until May 7, 1888, since which time he has fed himself entirely by the tube. On April 30 the tube was removed, and a tupelo tent inserted to dilate the fistula, after which a large, hard-rubber tracheotomy tube was inserted; but as this permitted a great deal of leakage, a soft catheter, No. 16 (American), was substituted, since which no leakage has occurred. The first tube was entirely satisfactory in every respect, except that its diameter was too small to allow of a sufficiently varied diet.

During the first seven days after the use of the larger tube he gained seven pounds in weight.

The character of the stools have indicated throughout a good digestion.

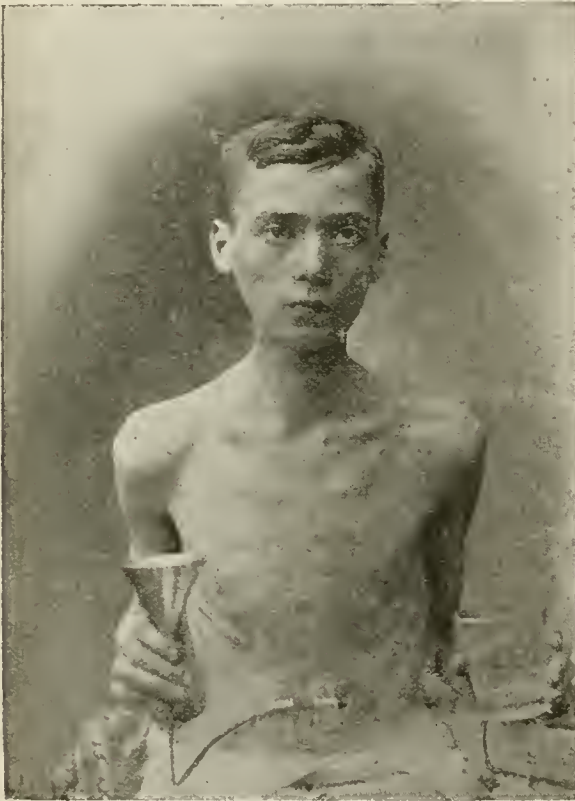
The photograph here shown was taken just before the substitution of the larger for the smaller tube, and consequently represents him as poorer in flesh than he is at the present time. Without tiring our reader by an extended review of this subject I wish, briefly, to discuss the following questions:

1. When should the operation be made?
2. At what time should the opening in the stomach be made relative to the opening of the abdomen?
3. What anæsthetic should be used?
4. What kind of tube is best?

Regarding the first question I am convinced, from a rather extended research into the literature of the subject, that J. Greig Smith is right when he says "statistics prove little in the way of results beyond the fact that the operation is systematically delayed too long."¹ While this is true whether applied to cancerous or cicatricial stricture, yet *early operation* should be particularly insisted upon in the latter class of cases, for in these the operation is not merely palliative, but may prolong life indefinitely.

The mortality after operation is about the same in malignant and non-malignant cases. This, it seems to me, can only be accounted for by assuming that the operation is deferred too long in the latter in the hope that something may yet be done by milder methods. In strictures located high, as a result of the entrance of foreign matter into the bronchial tubes during efforts at deglutition, a bronchitis is often set up which will continue to grow worse as the cause continues; hence I regard the presence of bronchitis as an indication for early operation.

I cannot close the discussion of this question



fistula, and, as the cough grew less, he was allowed to take some milk, etc., *per vias naturales*.

The dulness began to disappear and the recovery from this time on was uninterrupted, though the respiration continued rapid until the wound was healed, which was due (in part at least) to the wound having been made too near the costal margin.

The stitches not connected with the stomach were removed on the fifth day, and those attaching that viscus to the abdomen on the tenth.

He sat up first on the ninth and was walking about by the twenty-fifth day.

¹ Abdominal Surgery, second edition, p. 350.

better than by recommending for adoption the doctrine of J. Greig Smith.

Speaking of cicatricial strictures he says: "I conceive, therefore, that in every case, . . . as soon as it becomes evident that minor measures are ceasing to be efficient, we ought to perform gastrotomy. And, further, the operation ought not to be delayed beyond the time when the health begins palpably to suffer."²

2. What time should the stomach be opened relative to the opening of the abdomen?

If the patient be able to swallow fairly well without producing cough, or if enemas be well retained, and there is no immediate danger of death from exhaustion, it is better to wait four or five days before opening the stomach. If, however, there be much bronchitis which is clearly aggravated by attempts at swallowing, or if death from exhaustion is threatened and enemas are not well retained and absorbed, then the operation should be completed at once or at most at the expiration of four or five hours, as agglutination will take place in this time. I am not aware that any one has ever spoken of bronchitis as an indication for early operation, or its completion in one sitting, but to my mind it is one of the most frequent and important in cases in which the stricture is located high or in which there is much regurgitation. In view of the fact that the necessity for the early opening of the stomach may arise in any case, it would be better always to fix the stomach accurately and securely to the abdominal wall.

3. What anæsthetic should be used? While I am opposed to chloroform as a general anæsthetic, yet we believe it by far the safest in the great majority of cases of gastrotomy. Bronchitis frequently exists at the time of operation, and if we add to this the additional irritation that ether always produces, it will not take a great stretch of the imagination to see how it might prove fatal. And a pneumonia or bronchitis would prove fatal in these cases that under ordinary circumstances would be promptly recovered from. Not only does the exhaustion, usually present, and the shock from operation contribute to the fatality of bronchitis and pneumonia in these cases, but another important factor also, is the proximity of the wound to the diaphragm and its involvement of accessory muscles of respiration, which renders deep breathing painful and leads to a continuous congestion of the lungs, even in the absence of inflammatory action. Again, coughs are more or less dangerous in all cases of abdominal incision, for the traction which they produce on the stitches interferes with union and may open the wound. If ever I am called upon to make this operation again I shall use chloroform as the anæsthetic in the absence of any special contraindication.

4. What kind of tube is best? Leakage after establishment of the fistula is one of the greatest

drawbacks to the operation. Various devices have been used with varying degrees of success. J. Collins Warren describes and illustrates a very ingenious device in the *Medical Record*, of Nov. 5, 1887, which was successful in the case there reported, and is constructed on the same principle as Bernard's tube, which he used in dogs, except that Warren's was made of india-rubber. With both these tubes the idea is to prevent leakage by approximating the flanges. Such approximation leads, as a rule, to annoying, if not serious, ulceration from pressure.

Any tube made of hard material is objectionable; for if it fits tight enough at first to prevent leakage, it will soon produce absorption by pressure, and then leakage will occur. Again, if a hard tube is used there is danger of the inner extremity producing irritation unless great care be used not to have it long enough to project beyond the level of the mucous surface. The tube should be such as can be worn continuously, and would permit of feeding with a minimum amount of trouble. The lumen of the tube should be sufficiently large to allow solid food to pass easily through it. An ordinary soft rubber catheter of large size (No. 26 to 30 F.), held in place by adhesive strips, meets all requirements better than any other device with which I am acquainted. The flexibility of the catheter and its smooth rounded end prevent it from producing annoying irritation. Being soft, it can be fitted tight enough to prevent leakage without the pressure producing absorption, the gastric juice does not affect it, it is sufficiently long to permit of food being given through it without removal of any of the clothing. Outflow of the stomach contents is easily prevented by the use of a cork in the extremity. One should be chosen with as thin walls as can be found, for they will be found to differ in this regard very considerably.

June 4, 1888.

A LARGE SUPPURATING ABDOMINAL CYST.

*Read before the Medical Society of the District of Columbia,
March 7, 1888.*

BY JOS. TABER JOHNSON, M.D.,

OF WASHINGTON, D. C.

I was called to Miss C. on February 13, 1888, by Dr. Bedford Brown, of Alexandria, Va. I found her to be a spinster, aged 57 years, with an enormous cystic abdominal tumor, which had been diagnosed as ovarian. After examination, I expressed the opinion that it might be ovarian, but was quite as likely to be a dermoid-cyst or a fibro-cyst of the uterus. It was so very large as to prevent any accurate palpation or diagnosis of its attachments or origin. She said she had first noticed it low down in the left side—that she had always thought it had something to do with the kidney on that side. It had not prevented her from at-

² Abdominal Surgery, second edition, p. 351.

tending to her duties as a school teacher for a long time. Thought it had been growing for 20 years. For the past five months had grown rapidly, and for several weeks she had been confined to bed—had lost all desire for food, suffered much from nausea, diarrhœa, progressive emaciation and consequent prostration. Had had several attacks of peritonitis, with pulse varying from 100 to 120, and temperature from 100° to 103°.

When I saw her she was a great sufferer from the effects of the size and pressure of the tumor; embarrassed respiration, two large bed-sores forming, inability to hold her water, absolutely no appetite, frequent vomiting, turned over in bed with great difficulty, and was unable to sit up or walk about.

From the size of the growth I judged it must weigh about 75 pounds. She was very anxious for an operation, and requested to know if she had any chance to get well. I told her I thought she had, but that she had many points against her; such, for example, as her age, 57, her great weakness, inability to take food, repeated attacks of peritonitis, probably resulting in the formation of numerous adhesions, lack of recuperative power, etc. She was anxious to enter my private hospital and made her plans to be transported to Washington, but I was unwilling to receive her.

I went to Alexandria on the morning of February 28, 1888, taking with me Dr. Cuthbert, to assist, Dr. Luce, to administer the anæsthetic, and a trained ovariectomy nurse. Preparations being completed the operation was begun at 10:15 o'clock.

I was less sure of my diagnosis after palpation under ether and as the operation proceeded grew more and more uncertain, and after the tumor was removed was more uncertain than ever. Percussion showed tympanitic resonance low down in front and over the anterior surface of the tumor in a narrow line. I knew I should find intestine there and I did. Upon making a three-inch incision the descending colon came first into view, and the entire anterior surface of the tumor was covered with omentum, in which were many large blood-vessels. I selected a spot free from vessels after enlarging the opening to six inches, and tapped the tumor with Lusk's large trocar. I drew off 70 pints of brownish-black fluid. Her breathing at once became deeper and better.

I then drew out a portion of the sac and cut through the vascular omentum, and began the tedious process of enucleation. The intestine being attached to omentum it peeled off with the omentum and gave little trouble by itself.

The great cavity out of which the cyst came was entirely outside of the general abdominal cavity. While enucleating the cyst I tore through its capsule or covering low down in the pelvis and thus gained an opportunity to examine for the first time the nature of the pedicle, and was sur-

prised to find the uterus and ovaries perfectly normal and entirely free from any connection with the tumor. I continued the enucleation and finally freed it from all its attachments. In doing so I was compelled to enlarge the incision three or four inches above the navel, and traced its origin deep down and to the left of the vertebral column. I now thought it to be an enormous cyst of the left kidney. The condition of the patient became so bad that fears were expressed that she would die on the table. Every effort was made to revive her, including hot water in the abdominal cavity. It was evident she was sinking and the pedicle was drawn up into the upper angle of the wound, and finally secured with Keith's clamp. The cyst cavity and abdominal cavity were then washed out, the edges of cyst cavity were stitched to the edges of the abdominal wound which was closed with a dozen sutures; dressings applied, and the patient put to bed. She died in about half an hour.

I have been unable to decide as to exact nature of the tumor. Dr. Lamb, of the Army Medical Museum, says he does not know what it is, and I hope it will be referred to the microscopical committee for examination and report.

The following is Dr. Lamb's report:

Large Suppurating Cyst, Removed by Dr. J. Taber Johnson.—The cyst is unilocular with several depressions like sub-cysts, whose walls have disappeared in the general cavity; or they may be simply sacculi. The outer surface shows a smooth covering like peritoneum; the inner surface a nodular thickening like a suppurating surface, chronic in character, and in recent state was partly covered by blood-clot. The wall itself is white and dense and shows many sinuses like the wall of the pregnant uterus; but they appeared to be entirely empty of blood. Two tubes enter the great cavity in very much the same oblique manner as the ureters in the bladder; indeed they much resemble the ureters. They do not so much resemble Fallopian tubes.

MEDICAL PROGRESS.

TREATMENT OF HEAT FEVER.—DR. F. A. PACKARD, of Philadelphia reports thirty-one cases of heat fever treated at the Pennsylvania Hospital during the summer of 1887. The cases were all treated under a canvas roof, covering over a portion of the hospital yard. This was found to be a great convenience, and of benefit to both patients and attendants. As the yard is paved with artificial stone, and could consequently be kept cool by liberal use of the hose, there was a much less impeded circulation of air under the canvas than could have been obtained

in a ward, and the cases were removed from the unavoidable bustle and constant motion present in the general receiving ward. Adding to this fact that practically no time at all elapsed between their arrival in ambulance or police patrol wagon and the institution of treatment, the advantages of the temporary ward are apparent.

Almost without exception the cases were brought to the hospital either on the hospital ambulance or on the police patrol wagons, and were usually rubbed with ice on the way up to the hospital. The patrol crews soon learned how to diagnose and temporarily to treat sunstroke, and on only one occasion was a patient rubbed with ice who was not a fit subject for such treatment. This preliminary icing undoubtedly was of value to the patients as saving time, and it probably kept the temperature record in the cases at a lower average than it would otherwise have obtained.

As soon as a patient with heat fever was brought to the hospital he was placed on a waterproof fracture-bed, his clothing removed as rapidly as possible, a thermometer introduced into the rectum, and ice packed about the body and extremities. Usually at the outset, m , xv or xx of tr . digitalis were administered hypodermatically. The thermometer was removed every seven minutes, the icing being continued until the rectal temperature fell to 104° F. The patient was then dried and put on a clean bed, with an ice-cap to his head, and in favorable cases the temperature gradually fell to normal. It was found that, if the icing were continued after the rectal temperature had fallen below 104° F., there was apt to be too rapid and great a fall, so that the application of external heat and free stimulation were required—a state of affairs certainly undesirable.

The above is an outline of the general mode of treatment adopted in the cases with temperature exceeding $106\frac{1}{2}^{\circ}$ F. Those cases with a temperature below that point were stripped and liberally sponged with a mixture of one part of alcohol and four parts of iced water, an ice-cap being applied to the head. If the temperature were not above 106° F., this was always found to be sufficiently active treatment. Subsequent elevations of temperature occurring after primary reduction were treated after the manner indicated above. In but a few cases were any other antipyretic measures adopted.

Other means of treatment were employed to meet individual symptoms in various cases. Where convulsions were present after the temperature had been lowered to a considerable extent, morphia was employed, usually with good effect. In the favorable cases respiration and pulse both improved in character with the fall of temperature, but if they did not do so, bleeding was employed in spite of the feeble pulse, and was almost in-

variably followed by quieter, fuller respirations, with a soft, steady pulse.

A word in regard to the use of bleeding. When the face was congested or livid, the capillary circulation over the whole body obstructed, the heart, as determined by auscultation, laboring to force the blood around the vascular circle, the breathing shallow and stertorous, the contracted pupils with other evidences of obstructed venous circulation in the brain present, the evident indication was to empty the overloaded veins of the blood that was stagnating in them and so embarrassing both respiration and circulation. Wet-cupping behind the ears was always first tried, but it was in almost every case impossible to withdraw more than a few thick black drops of intensely altered blood, even when crucial incisions, with a bistoury were added to the smaller incisions of the scarificator. In no case where it was attempted could enough blood be withdrawn by this means to affect either the general or cerebral circulation. Bleeding from the median basilic was then, if deemed necessary, employed, and even with this free outlet the blood did not flow, but had to be squeezed up from the hand, issuing then in thick, black jets and ceasing as soon as upward pressure with the hand was discontinued. After the withdrawal by this means of from twelve to sixteen ounces of blood there was usually marked improvement in circulation, respiration, and color, with, in some cases, complete or partial return of consciousness.—*American Journal of the Medical Sciences*, June, 1888.

SACCHARIN IN PREVENTING AMMONIACAL CHANGE IN URINE IN CHRONIC CYSTITIS.—DR. JAMES LITTLE says:

For the past three years I have been asked, from time to time, to see a lady, nearly 80 years of age, who is quite confined to bed in consequence of chronic disease of the bladder, which gives rise to frequent and painful calls to pass water. The urine always threw down a copious purulent sediment, and, except when decomposition was prevented by treatment, was always ammoniacal. The lady has many times passed with great suffering, phosphatic calculi, and, I have no doubt, many such exist in the bladder, but she has always refused to permit any surgical interference beyond the occasional introduction of a soft catheter, and the washing out of the bladder by a lady who acts as her nurse. Quinine and boric acid, when taken in fair doses, always purified the urine; but about three months ago her stomach became so irritable that these drugs could not be borne, and the washing out of the bladder by a weak warm sublimate solution could no longer be practiced, as the passage of the catheter had become exquisitely painful. The consequence was that the urine became so offensive that the odor met one on the stairs, and the

patient's attendants had often to leave the room to avoid being sick. In this difficulty it occurred to me to try saccharin. I directed six of the tabloids to be used daily. In three or four days the urine was no longer offensive. The patient has continued their use ever since, and the urine has not again become ammoniacal, though there is little if any, diminution in the quantity of contained pus.

Since the foregoing case came under my observation, I have had four other opportunities of observing the effect of saccharin in patients who were passing ammoniacal urine. They were all males; one a case of catarrh of the bladder, in a paraplegic gentleman; one a case of chronic cystitis, with enlarged prostate; and two cases, in which there had existed stricture of the urethra, but in which, although a surgeon had successfully dilated the stricture, the urine remained ammoniacal. In all these cases the saccharin was distinctly useful, but in all its administration had been combined with the daily use, by the patient himself, of a catheter, so as to prevent the accumulation of residual urine in the bladder—a precaution without which no drug will, I think, prevent decomposition of the urine.—*Dublin Journal Med. Sc.*, June, 1888.

CAFFEIN AS A CARDIAC STIMULANT.—DR. DE GEMPT writes (*Berl. klin. Woch.*, Nos. 25 and 26), in support of the employment of caffein (mostly in the form of the bisalt, “caffeinum natrosalicylinum”) hypodermically and by the mouth in cases of threatening collapse, especially in pneumonia. He records several such cases, but, in all, other stimulants, as alcohol, ether and ammonia, were more or less freely given. The dose of the caffein was 0.35 grm., repeated four or five times a day, but sometimes a larger quantity—*c. g.*, 0.2 grm.—was given. The author says that the drug is indicated in the course of acute pneumonia, as soon as there is evidence of cardiac failure, lowered arterial pressure, great rapidity or irregularity of the pulse. The administration of the drug should be commenced, if possible, before the onset of collapse; but even if the latter condition set in rapidly the drug is often of use, and is most urgently indicated. Where there is cardiac debility, and also in the very young or old, caffein may be prescribed from the beginning of the attack. The result of its employment is to cause a diminution in the pulse and respiration rates, an increase of the arterial pressure, with fall of temperature and general improvement. Stimulants are not to be withheld, but are often very usefully given in conjunction with the caffein. The drug has a very rapid action, and in serious cases the effect may be still more quickly produced by administering it subcutaneously. It may be continued for a short time after the pyrexia has abated. Caffein is also

indicated in collapse and hypostatic congestion of the lungs; whilst in pulmonary emphysema and asthmatic conditions the indications for its use are the same as those in cases of heart disease.—*The Lancet*, June 30, 1888.

INHALATIONS OF SULPHUROUS ANHYDRIDE IN PHTHISIS.—DELOON records the case of a man, 32 years of age, whose father died of pulmonary disease at 65. His wife also died of phthisis. Two months previously he caught cold and coughed incessantly. Subsequently he rapidly became emaciated and had profuse night-sweats. Rise of temperature at night. Appetite and digestion good. On examination, the right apex was found to be consolidated, with moist râles after coughing. He was treated by counter-irritants and subcutaneous injections of eucalyptol. His general health was also attended to. He did not improve, and by the end of February he expectorated large quantities of green, purulent material. His condition was grave in the extreme, a cavity having formed in the right apex, and sulphurous inhalations were resorted to as a last resort. Half a handful of flowers of sulphur was thrown on to a shovel of red hot cinders, and the patient inhaled the fumes until prevented by impending asphyxia. Each séance was followed by abundant expectoration of the purulent material. In the course of a fortnight signs of amelioration manifested themselves. The inhalations were continued together with the general treatment. Three weeks later the patient was apparently cured. The cavity in the right apex had cicatrized, and his general condition was flourishing. He was enabled to resume his laborious employment as a navvy, and no recurrence had taken place down to December, 1887.—*London Med. Recorder*, May, 1888.

THE SUBCUTANEOUS INJECTION OF ANTIPYRIN.—WOLFF, of Breslau (*Therap. Monatshefte*, June, 1888), thus summarizes the uses of antipyrin subcutaneously: 1. In the muscular rheumatism. 2. For the chest pains of phthisis. 3. For the neuralgias of superficial nerves. 4. As an aid in diagnosis. 5. In attacks of asthma. 6. For painful conditions, when morphine is contra-indicated, or to replace the latter, particular in children and those who bear morphine badly.—*Medical News*, July 14, 1888.

DISINFECTANT INJECTION IN LEUCORRHEEA.—CHÉRON uses the following formula:

Chlorate of potash	12 grams
Sydenham's laudanum	10 "
Tar water	300 "

Dissolve. Use 2 or 3 tablespoonfuls to the litre of warm water, and inject night and morning. The injection should last from 5 to 6 minutes.—*Gazette de Gynécologie*, June 1, 1888.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, JULY 28, 1888.

WHEN SHOULD DIGITALIS BE PRESCRIBED?

Bearing in mind the physiological and therapeutic actions of digitalis, it is a matter of less difficulty to give the principal indications for it in the organic affections of the heart. As was pointed out last week, one of the indications for the use of the drug is the period of the cardiopathy. But before considering the question, when digitalis is useful, it is well to know when it is injurious or useless. There may be, says Huchard, a cardiac *lesion*, but still no cardiac *malady*; the state of cardiac contractility, which should regulate the employment of digitalis, is normal. In the period of eusystolism, characterized by normal and almost perfect ventricular systoles, digitalis is useless. Here hygiene should be the only treatment. Suppose we have an aortic or mitral lesion, with hypertrophy, and the attendant physical signs, with frequent epistaxis, repeated accesses of acute pulmonary hyperæmia, congested face, injected eyes, ringing in the ears, heavy head, headache and cephalic throbbings, vertigo, the arteries beating with violence, the radial pulse full, vibrating, resistant, and there are frequent, often painful, sometimes nocturnal palpitations, causing more or less rebellious insomnia. Digitalis is injurious in these cases, says Huchard, for the patient has entered into the period of hypersystolism, characterized by increased arterial tension, and the drug will increase his distress. Here, too, hygiene and diet are the remedies, or

the bromides, aconite, and even arsenic, with perhaps leeches, or venesection.

For the same reason digitalis should not be given in the first phases of what Huchard terms arterial cardiopathies. For a long time he has insisted on the capital distinction between valvular cardiopathies and the vascular or arterial cardiopathies. The latter are nothing more nor less than the localization of arterio-sclerosis on the heart, characterized by increased arterial tension, which is the cause and not the effect of the sclerosis. In the early periods of arterio-sclerosis of the heart digitalis should be employed only with the greatest reserve, since, by increasing vascular pressure, it may lead to cerebral hæmorrhages, and by it also the nocturnal palpitations are increased, dyspnoea becomes more intense, and anginous accesses may be provoked.

After the period of hypersystolism, aortic patients, less frequently mitral, pass into the period of hyposystolism or asystolism. Here digitalis is useful. It produces the best effects. But there may come a time when the effects are no longer obtained, when the systole is soft and without energy, or the cardiac cavities are distended, when there is circulatory obstruction with peripheral œdema and visceral congestions, and diuresis remains below normal. Here digitalis is injurious, and for two reasons: 1. The cardiac muscle is profoundly altered, and digitalis can no more act on it than can electricity on a cut nerve. The drug here becomes an agent of prognosis and diagnosis, for it shows the existence of profound degeneration of the myocardium and of a true parietic state of its fibres (amyocardia). 2. In cardiac patients, in the subsequent alteration of the organs, there are two distinct periods: the one of venous stasis; the other of irremediable sclerotic lesions, in which cardiac drugs are given in vain. Still, in this last period caffeine in large doses may give very remarkable results.

Nevertheless, there are varieties in this cardiac paralysis, and there are degrees in this powerlessness of digitalis. The amyocardia (cardioplegia of Gubler) may be temporary, as may be the powerlessness of the drug. It should be remembered always that *if we wish to strengthen the heart we must facilitate and lighten its work*. Before prescribing digitalis we must empty the too full venous system, and this is best accomplished by venesection, local abstraction of blood, or by re-

peated purgations. Want of success with digitalis does not always depend, then, upon the disease, nor upon the patient, nor on the remedy, but upon the physician, who has not placed his patient in the most favorable conditions for the action of the drug.

At an advanced period of heart disease we often find albumin in greater or less quantity in the urine. This is not an absolute contra-indication to the employment of digitalis. The dangers of the administration of active medicines in renal affections have been much exaggerated, though that there are dangers no one can deny. But they demand prudence, not the doing away with drugs. That digitalis can be safely used in these cases is probably due to the fact that it is not eliminated by the kidneys, as was shown some two years ago by Lafon. While albuminuria is not a positive contra-indication to the use of digitalis, therefore, the drug should be used with caution in these cases, in moderate doses for two or three days, and its action carefully watched.

The seat of valvular lesions is an indication as to the use of digitalis. In aortic stenosis, for example, we know that the cardiac contractions and the pulse are slow. Why then should we prescribe a drug that will slow them still more, and that will act very much as the malady does? By doing this we expose the patients to the dangers of digitalism. In aortic insufficiency the diastolic rest of the heart is already long enough; digitalis makes it longer, and increases the already high arterial tension caused by the disease. Why add to the already injurious effects of the heart disease? asks Huchard. In mitral insufficiency it should be prescribed only in cases of great cardiac irregularity, or of confirmed hypsystolism. In pure mitral stenosis it often causes bad effects. It should not be forgotten that mitral and aortic stenosis are the two cardiopathies that remain latent for a long time, and demand active treatment late. There is no doubt that in aortic affections, and especially in Corrigan's disease, digitalis is often contra-indicated for a long time: it raises arterial tension in an affection in which this is already exaggerated; by augmenting the suddenness of the systole it gives to the blood-waves violent and repeated oscillations, which added to the high tension may cause cerebral hæmorrhages; it prolongs the already augmented diastolic period; finally, it contributes, by its vaso-constrictor action,

towards increasing the visceral and peripheric anæmia caused by the disease. In aortic affections more than in any other it is wrong to localize the lesion at the aortic valve, and then to take no account of the localization in the treatment.

But, says Huchard, the knowledge of the orifice affected is of secondary importance only for the indication of the drug. The therapeutic indication must be found in the cardiac muscle, as has been admirably expressed by Stokes, and endorsed by Laënnec. The situation of the cardiac souffle, its intensity and its absence furnish no indications for the administration of digitalis; it is the state of the heart muscle and of the vessels, their feebleness (cardio-vascular asthenia), and asystolism, that demand the use of digitalis. Let us understand what is meant by asystolism, as Huchard uses the term. There exists in all cardiac diseases a period intermediate between hypersystolism and asystolism, which Huchard calls hypsystolism. Now let us suppose a case: we have a patient in whom some months ago there were all the signs of normal or even exaggerated compensation; the præcordial shock was strong, vibrating, and well limited, the apex slightly lowered, urine normal in quantity, no trace of visceral congestion, and no œdema of the lower limbs. He now comes with slight perimalleolar œdema in the evening, becomes breathless easily, and has palpitations and a sensation of fulness of the chest. Examination shows slight congestion of the liver, which is painful on pressure, pulmonary hyperæmia and œdema; the cardiac contraction is soft, unequal and irregular, the cardiac impulse more extended, more diffuse, less sensible, the apex displaced, and cardiac dullness increased transversely; the first sound of the heart is more or less dull or weakened, the second a little loud in the region of the pulmonary orifice and to the right of the sternum. The pulse is feeble and undulating, the jugular veins swollen and prominent, and the urine scanty. In this case there should be no hesitation in regard to prescribing digitalis, for, says Huchard, there are three capital indications: feebleness of cardiac contractility, lowering of arterial and increase of venous tension, and scanty urine coexisting with peripheral œdema or visceral congestions. The urine furnishes indications for the administration of digitalis: if it becomes uratic, and falls below 800, 500, or to 200 grams a day, digitalis should be given. In giving digitalis in cardiac affections

we should examine the urine as carefully as we do the thermometer in fever.

In either asystolism or hyposystolism there may be three causes of error in regard to the contra-indication of digitalis: 1. The cardiac beats may be tumultuous and violent, the impulse of the heart becoming energetic for a few moments; but examination a few minutes afterwards may show that the energetic systoles are followed by weak or aborted and precipitate ones, constituting the cardiataxic asystolism of Gubler. Digitalis should be prescribed as a tonic and regulator of the circulation. 2. We may have a patient in whom the dilatation of the heart-cavities strikes against the thin and emaciated thoracic walls, giving the false sensation of energetic and violent beats. Here the clinical error is doubled if a therapeutic error be made by withholding digitalis on account of supposed exaggerated compensation. 3. In asystolism the dilated right heart is in immediate relation with the thoracic wall; if it lie close to the diaphragm the beats may be communicated to the whole epigastric region. The extent of these beats is no indication of their force; they will be found feeble, undulating, and scarcely appreciable, and digitalis should be prescribed.

To recapitulate with regard to valvular lesions: Digitalis is useless in the period of eusystolism, when the lesion is compensated; it is injurious in the hypersystolic period, when the compensation is exaggerated; it is efficacious in the hyposystolic or period of transient asystolism, when the cardiac muscle and the vessels are suffering from asthenia, and when there are œdemas, visceral congestions, dropsies, and the heart beats softly and feebly; in the period of definite asystolism, or of anyocardia, when the cardiac muscle is profoundly degenerated, digitalis is sometimes useful, it may be useless, or it may be injurious. It is in these cases sometimes that caffeine in large doses gives such signally good results.

There are still other classes of cases in which digitalis is used, but the consideration of these must be deferred.

THE CROONIAN LECTURES ON ANTIPYRETICS.

In his Croonian Lectures this year DR. DONALD MAC ALISTER has complemented his Gulstonian lectures of last year, in which nothing was said

in regard to the treatment of fever. While his subject for this year was "Antipyretics," the lecturer discussed the light thrown on the nature of fever by the means employed successfully for its treatment, and the lessons in the treatment of fever that flow from a right understanding of its nature.

In his first lecture Dr. Mac Alister went over the physiology of thermolysis. It has been found by Masje that probably 60 per cent. of the heat leaving the body does so by radiation. In the Zurich Hospital the true laws of skin radiation have been worked out, and have been found to be strikingly suggestive. A part of the skin suddenly uncovered naturally becomes cooler, but its radiation increases steadily as the temperature falls, until a certain limit is reached. Radiation is more active as the processes of nutrition and metabolism are more active. There are reasons for believing that the radiating power of the skin, which can be shown to depend on its physical and chemical constitution, is subject to nervous control; and in this way what seems to be the most purely physical of all the thermolytic processes is really under the control of the thermal nervous system.

In his second lecture Dr. Mac Alister discussed what may be termed the teleological pathology of pyrexia. It is admitted that fever is a sign of disorder, of disturbance, of a physiological function or functions. The author has some words for those that look upon high temperature in the infective diseases as a salutary process, and suggests that fever may be more salutary to the bacteria than to the patient. Nor is the view correct that high temperature is purely mischievous, and the efficient cause of all the dangers that threaten a fever-patient, since it must be admitted that many of the morbid phenomena accompanying fever occur independently of it. "High temperature," says Dr. Mac Alister, may or may not connote pyrexia. Some of the ways in which temperature may be raised are harmless, and there is good reason to believe that non-pyrexial elevation of temperature is not in itself a danger. Volkmann and other surgeons have recorded cases of aseptic operations and injuries in which temperatures as high as 105° were accompanied by no loss of appetite, no distress, and no symptom that could be characterized as febrile.

In the third lecture Dr. Mac Alister turned from the consideration of high temperature as the danger in the infective diseases to the infection, and then to the question of treatment. In regard to the infection he thought it obvious that if the grave morbid phenomena could not be set down to the pyrexial temperature we must attribute them in a large measure to the action of the specific virus or poison. Since the chief pathogenic factor in the specific fevers is apparently the specific virus, our first search must be for a specific remedy capable of destroying or counteracting the virus. Such are quinine and salicylic acid in malarial and rheumatic fevers, and their claim to be antipyretics rests on their specific action to a large extent. But the ideal febrifuge, which will allay fever by restoring to healthy function the disordered thermotaxic mechanisms, thrown out of gear by the action of the morbid poison, has yet to be found. The next best thing to such a drug is to discover a mode of treatment that shall act vicariously for the thermotoxic mechanism, and compensating for its lost control over the thermal functions.

EDITORIAL NOTES.

HÆMORRHAGIC INFARCT OF A UTERINE MYOFIBROMA.—In *Pract.*, No. 9, 1888, MME. PROKOPIEVA reports a case of this rare condition in a woman æt. 34 years, nullipara. The tumor was removed through the abdominal wall, and was as large as a five or six months' fœtus. On the surface was a round spot, deep red at the periphery, but clearer toward the centre. On section this was seen to be prolonged in the form of a cone in the centre of the tumor. Microscopic examination showed that the tumor had the structure of a myofibroma, with hæmorrhagic infarcts (with destruction of the blood-globules and of other cell elements at the centre of the infarct, and marked hyperæmia at the periphery).

The patient said that the tumor was first noticed a year before the operation. At this time she felt a sudden sharp pain in the pelvis, and she was forced to remain in her bed for three weeks. Then the abdomen began to enlarge, and the growth of the tumor was very rapid. At the time of the operation the circumference of the abdomen was 90 cm. The uterine cavity was enlarged. There was slight mitral insufficiency, which was in favor

of the embolic origin of the infarct. Before being operated on the patient remained in the hospital six weeks; the abdominal pains persisted, and increased at the menstrual epochs. Among the prominent clinical symptoms in this case were the pains. Laparotomy showed that the pains were exactly at the seat of the infarct.

A LEECH IN THE LARYNX.—In a recent number of the *Revue de Médecine et de Pharmacie Militaire* is an account of a case in which a leech got into a man's larynx, without his knowledge, and caused symptoms for which DR. GODET and the other medical attendants could not account. The patient suffered from hoarseness and a sensation of a foreign body in the larynx for some three weeks, but he had no serious dyspnœa, and nothing could be seen with the laryngoscope. Finally he began to spit blood, and then he felt something move in his throat. On the 23d day, after the patient had made a violent expiratory effort, Dr. Godet saw the leech fastened in the subglottic part of larynx. Having no proper laryngeal forceps at hand, he divided the thyroid cartilage in the middle line, and the leech was easily removed. The cartilage was closed with two sutures, and perfect union resulted. The patient's voice was not affected by the operation.

AN UNUSUAL CAUSE OF DEATH.—The *Memphis Medical Monthly*, of July, has the following, from the *Memphis Appeal* on a coroner's jury's report: "The investigation developed the fact that the dead woman's skull was cracked, exposing the brain. The mother, husband, and little child of the dead woman were all examined by the jury, but their evidence failed to show the cause of the strange opening in the skull. There being no further evidence in sight the jury retired for deliberation, and returned its verdict, which was that the woman died suddenly from a natural cause, produced by expansion of the skull." The county officials, says the *Memphis Medical Monthly*, allow but \$5 for post-mortem examinations, whatever the character of such may be, and for this reason the coroner is not able to obtain the service of a competent physician.

PHYSICAL EDUCATION OF THE BLIND.—A sound system of education has been developed by DR. CAMPBELL at the Royal Normal College for the Blind. A blind teacher gives instruction in

singing, and connected with the College is a gymnasium, swimming bath, cycling track, and a boating lake. The College, says the *British Medical Journal*, is now educating 160 students, but it effects more than that for the public good in training a large number of teachers, who go thence to all parts of the world. A Royal Commission is now inquiring as to the educational needs of the blind, and the best means of providing them.

A MEDICAL FACULTY FOR SERVIA will, it is said, be soon established. Belgrade has a University that contains all the faculties except that of medicine. Servian students have been hitherto obliged to go abroad for their medical education. Most of them have gone to Vienna or to Paris, since the Austrian and French degrees are recognized by the Servian Government. They that have gone to Germany and other foreign countries, however, had to pass an examination before a medical commission in order to obtain the right to practice.

NEW TEST FOR BISMUTH.—To the Society of Chemical Industry Mr. F. B. STONE recently showed a very delicate test for bismuth. It depends on the fact that a strong solution of iodide of potassium produces a bright yellow color when added to a very dilute solution of sulphate of bismuth, containing only a small quantity of free sulphuric acid. One part of bismuth in 1,000,000 will show a distinct coloration.

A MARINE BIOLOGICAL LABORATORY has been completed at Plymouth, England, overlooking the Sound. The Marine Biological Association of the United Kingdom was founded "to promote accurate researches leading to the improvement of zoological and botanical science, and to an increase of knowledge as regards food, life-conditions, and habits of British food fishes and mollusks."

SIX CHILDREN AT A BIRTH.—DR. VASSALI, of Lugano, reports the case of a woman that gave birth to six children at one time, about the 115th day of pregnancy. There was only one placenta. The mother had previously given birth to seven children in two labors.

A PROFESSIONAL WEDDING.—The marriage of Professor Joseph Jules Déjerine, of Paris, and Mlle. Augusta Klumpke, Internist of the hospitals of Paris, is announced.

THE MARGARINE ACT IN ENGLAND seems to have had a salutatory effect upon the adulteration of butter, for Mr. J. Carter Bell, the Cheshire County Analyst says that of fifty-one samples one only was adulterated.

DR. ENGELMANN, Professor of Comparative Physiology and Histology in the University of Utrecht, has been appointed successor to Professor Donders in the chair of Physiology. Dr. Engelmann's chair is taken by Dr. Pekelharing.

DR. PAUL LOVE, tutor in Forensic Medicine in Paris, is to go to Germany and Austria to study the organization of that branch of study in those countries.

THE NUMBER OF MEDICAL STUDENTS AT GREIFSWALD is on the increase, and the clinical students for this summer's session number more than 200.

THE JEFFERSON MEDICAL COLLEGE announces that with the winter session of 1890 a three years' systematic obligatory curriculum will begin.

THE LEHIGH VALLEY MEDICAL ASSOCIATION will hold its eighth annual meeting at Paxinosa Inn, near Easton, on August 15.

DR. RAYMOND, of the Paris Faculty will go to Russia to study the teaching of nervous diseases in the Russian Universities.

THE HOSPITAL SUNDAY COLLECTIONS in London this year amounted to £37,475; last year the amount was £37,000.

THE TRI-STATE MEDICAL ASSOCIATION of Mississippi, Arkansas, and Tennessee will meet in Memphis on November 13.

DR. DIANOUX has been appointed to the recently established chair of Clinical Ophthalmology at Nantes.

PROFESSOR PREYER, Director of the Physiological Institute in Jena, has been called to Berlin.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION will meet in St. Louis on September 11.

DR. FR. LÖFFLER has been appointed ordinary Professor of Hygiene at Greifswald.

THE NUMBER OF MEDICAL STUDENTS IN LEIPZIG is now 783.

PROFESSOR SCANZONI has resigned his position at Würzburg.

SOCIETY PROCEEDINGS.

American Otological Society.

Twenty-first Annual Meeting, held at Pequot House, New London, Connecticut, July 17, 1888.

MORNING SESSION.

The Society was called to order by the PRESIDENT, DR. J. S. PROUT, of Brooklyn.

Drs. Green, Theobald and Carmalt were appointed as the Business Committee.

Dr. E. Williams, of Cincinnati, was elected an honorary member of the Society.

Dr. W. H. Carmalt presented the report of the committee of conference on

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

The report was accepted and it was decided that when the Society adjourns, it adjourns to meet at the Arlington Hotel, Washington, D. C., September 18, 1888, at 11 A.M. On motion of Dr. Green it was decided that the meeting should be strictly for scientific matters and should not be regarded as a business meeting; that it should not take the place of the annual meeting.

Two papers by Dr. S. Sexton, of New York, entitled *Periostitis Externa of the Mastoid* and *Some of the Indications for Excision of the Drum-head and Malleus*, were read by title.

DR. CHARLES H. BURNETT, of Philadelphia, reported

A CASE OF AURAL VERTIGO (MENIÈRE'S DISEASE) RELIEVED BY EXCISION OF THE MEMBRANI TYMPANI AND MALLEUS.

The patient was a young, unmarried woman, 37 years of age, who six years previous had been under treatment for chronic naso-pharyngeal catarrh and chronic catarrh of the left middle ear, accompanied with hardness of hearing, tinnitus aurium and a sense of fulness in the affected organ. Treatment of the catarrhal disease of the ear produced no benefit. After the lapse of six years, the symptoms already named grew worse, and there was superadded marked aural vertigo. The membrani tympani in the line of the malleus handle were found adherent to the promontory, and the consequent retraction of the entire chain of bones was held to be the cause of the aural vertigo and the sense of fulness, and of the tinnitus. The operation of excision of the membrana tympani and the malleus was performed under ether, May 21st last, with entire and immediate relief to the aural vertigo (which before had often been sufficient to cause the patient to hold to a lamp-post for support), and to the sense of pressure and tinnitus, which good result has been maintained

to the present time. The hearing was practically unaffected by the operation. The incus was detached from the stapes but could not be removed, as it slipped into the attic, and grappling for it is not advisable on account of the risk of irritation. Its removal, furthermore, would have no effect in the result of the operation.

DR. J. O. TANSLEY, of New York: I have now under my observation a girl on whom this operation was performed some eighteen months ago. When she came to me the whole internal canal was filled with polypi and she presented serious brain symptoms. I took out all the polypi and found a portion of the drum remaining, and above a localized necrosis into which a probe passed at least $\frac{1}{4}$ -inch. The patient has been under observation every day for two months. The local necrosis is healed and she is doing well. There are still some brain symptoms. It seems to me that this is a very serious operation, and I should hesitate some time before performing it on account of the results that might occur. In this case the result seems directly traceable to the operation.

DR. C. H. BURNETT: My patient did not remain in Philadelphia, but I was informed that two or three weeks after I saw her a discharge appeared. I think that there is still a slight discharge, but the membrane is forming. In another case a slight discharge appeared soon after the operation, but ceased after the membrane had reformed. The case reported by the last speaker was not one of the class to which I have alluded. The operation was evidently not properly performed if there remained a portion of the membrane and there was neurosis. I have not found this a dangerous operation. No one has reported bad results from this operation properly performed.

DR. S. SEXTON, of New York: I have performed this operation between fifty and one hundred times in the past few years, and have obtained decided benefit in a number of cases of tinnitus and other subjective symptoms. I have known of no case in which there was aggravation.

DR. S. SEXTON then exhibited *A New Portable Battery for the Storage of Electro-motor Force*, and *A New Head Lantern for the Employment of Electric Light in Surgery*.

The battery was made at his suggestion by the River and Rail Electric Light Co., of New York. It consists of three cells and will light a six-candle electric light. The lantern is a modification of that of Trouve, but much lighter and having a non-conducting base. Such a light is almost necessary in operations on the ear when ether is used as an anæsthetic. The battery will work continuously for twenty-four hours and will retain its power for several weeks or months. It may be charged by a dynamo or by twelve gravity cells. When not in use the storage battery may be kept in connection with the gravity cells.

DR. A. H. BUCK, of New York, read a paper on
REFLEX INFLUENCES IN THE PRODUCTION OF
NASO-PHARYNGEAL CATARRH.

We know little of the direct exciting causes of naso-pharyngeal catarrh. The most common indirect cause is chilling of the surface of the body. According to certain authorities affections of the teeth should rank next in order of frequency. The author had, however, seen very few cases in which dental disturbance played the part of a promoter of naso-pharyngeal catarrh or of aural disturbance. Some of those indirect causes which he had observed were then enumerated. Irritation of the gastro-intestinal canal is in not a few instances a strong exciting cause of naso-pharyngeal catarrh and of all the aural disturbances growing out of such a catarrh. A male 45 years of age had for years been more or less a sufferer from naso-pharyngeal catarrh with tinnitus aurium and slight impairment of hearing, and more recently had begun to suffer from feeble digestion. He noticed that after indulgence in certain articles there would be abdominal discomfort, and at the same time marked exacerbation of the naso-pharyngeal catarrh. So long as the offending substance was in the stomach, there was only a slight sense of discomfort, but in the course of three or four hours a slightly painful peristaltic movement would set up in the bowels. Simultaneously the secretion from the vault of the pharynx would become unpleasantly active and the tinnitus would increase. This condition would last for an hour, and then the naso-pharyngeal catarrh would return to its usual state. These attacks were accompanied with the escape of large quantities of gas by eructation. In many patients, usually men between 40 and 60 years of age, where we have reason to believe that the gastro-intestinal tract is habitually in a state of greater or less irritation, we find the faucial mucous membrane red and swollen. In these cases the disease which claims chief attention is the gastro-intestinal affection.

Reflex influence involving the vault of the pharynx and the ear may emanate from more distant sources. A lady 40 years of age complained of distressing tinnitus involving both ears. There had been mild naso-pharyngeal catarrh from time to time for many years. At times she was almost entirely free from tinnitus. I always succeeded in giving prompt relief by applying a moderately strong solution of silver nitrate with a mass of absorbent cotton to the vault of the pharynx. After a time this failed to give relief. It was then learned that for many years she had suffered with pain in the pelvic regions and back, and that at this particular time she was suffering in a more marked degree. A specialist was then consulted, and it was found that there was retroversion of the uterus and subacute parametritis. These con-

ditions were removed and the tinnitus disappeared without treatment to the vault of the pharynx.

The author stated that he had spoken of these as indirect causes, that is, as factors competent to aggravate a preëxisting but perhaps latent catarrhal disease; but he saw no reason why these reflex influences may not, in certain cases, play the part of direct exciting causes. He considered it impossible to demonstrate the correctness of this belief, and preferred to adopt the view which assigns to them a less independent rôle.

DR. S. D. RISLEY, of Philadelphia: It is pretty generally admitted that nasal and pharyngeal disease are especially liable to occur in persons of a gouty diathesis. Naso-pharyngeal is one of the most uniform manifestations of lithæmia. From the symptoms detailed in regard to the first case of Dr. Buck, I should suggest that the digestive disturbance was probably associated with a lithæmic condition.

DR. C. H. BURNETT: I have seen a number of cases of tinnitus without deafness due entirely to dyspepsia. The use of nitrate of silver has been referred to. While this may be of service in other locations, I think that it is the worst application that can be made to the nose or the naso-pharynx. Its use will be followed sooner or later by sclerosis and atrophy.

DR. S. SEXTON: I have seen many cases in which irritation in the mouth has been the cause of naso-pharyngeal catarrh and aural symptoms. A lady was brought to me with intense pain in the ear and the head. There was nothing in the condition of the ear to account for these symptoms. Examination of the mouth showed that she was wearing a plate to bring the teeth closer together. The gum was intensely inflamed, although the patient complained of no discomfort. The removal of the plate caused a disappearance of the pain in the ear and head.

DR. J. F. NOYES, of Detroit: This paper brings up the fact that it is important that in our special practice we should consider general practice. I have always recognized those so-called reflex causes, and have treated cases by searching out these causes.

DR. SAMUEL THEOBALD, of Baltimore: I think that where atrophy follows hypertrophic catarrh it is the result not of the application of nitrate of silver, but of the continuance of the catarrh.

DR. CHAS. J. KIPP, of Newark: I agree with Dr. Theobald as to the value of nitrate of silver. I rarely use it in a stronger solution than 20 grs. to the ounce, and neutralize it afterwards by salt water.

DR. HENRY D. NOYES, of New York. I have frequently noticed the connection between the lithæmic condition and certain affections not only of the naso-pharynx, but also of the external auditory canal. There are certain eczematous conditions associated with the gouty diathesis.

DR. A. H. BUCK read a paper entitled
A CONTRIBUTION TO THE ANATOMY OF THE ELEPHANT'S EAR.

The ear was exhibited and the interesting points indicated. The external auditory canal is imbedded in air-containing cells, and is $6\frac{1}{2}$ inches long. The canal at the time of examination was filled with desquamated material. In the middle ear, the handle of the hammer seems to lie in a horizontal plane. It is not vertical, as in the human being. The anterior part of the drum cavity is completely cut off from the posterior part. The Eustachian tube comes up through a system of air-cells and opens through one of them close to the drum membrane. Under the floor of the tympanic cavity there are three septa making stall-like spaces. Two of these are quite long, six or seven inches. The labyrinth and other parts were not examined.

DR. HUNTINGTON RICHARDS, of New York, reported a case of

POLYPOID ANGIOMA OF THE EAR.

The patient, a girl 6 years of age, came under observation May 4, 1888, with profuse and badly swelling otorrhœa, unaccompanied by pain, and dating only from the preceding February. Hearing seemed good. No bleeding from the ear had ever been observed. The general health was excellent. Examination of the affected ear revealed a polypoid mass almost occluding the canal. The color was deep purplish red. A considerable portion of the tumor was at once removed with the snare, and the remainder of the growth was extracted on the following day, leaving a small pedicle attached, seemingly, to the outer surface of the drum membrane, close to the prominence formed by the short process of the hammer. This stump was cauterized with chromic acid. Hæmorrhage from the cut surface of the growth was unusually profuse at both operations. The child's hearing is now excellent, although both membranes are depressed and of a dark grayish-red color. The removed growth was pronounced to be an angioma. Three micro-photographs, showing the appearance of the growth, were shown.

DR. RICHARDS also reported a case of

"FALSE-DRUM MEMBRANE."

The patient, a man 21 years of age, was totally deaf in the affected ear. There was a vague history of an attack of otitis media in early childhood. The other ear presented the common appearance of otitis media purulenta chronic. Examination of the ear that was not discharging showed a membrane occluding the canal. It differed from the normal drum membrane in color, shape, relation of its plane to the long axis of the canal, and apparent thickness. It varied little in color from the skin lining the canal. The surface was perfectly smooth.

A triangular opening was made through this membrane. This caused no pain. Through this opening it was seen that there was no drum membrane, but the inner wall of the tympanic cavity came into view. The hearing was only slightly improved. When seen a few days later no discharge had appeared. Since that time he has not returned to the Infirmary.

DR. SAMUEL SEXTON: I have seen several such cases as that described in the last paper. In a case seen last year I removed the membrane and then took out the malleus and incus. This case made a good recovery. The improvement in hearing was decided. I would suggest this operation in such cases as a possible means of improving the hearing for it opens up the tympanic cavity which is a good condenser of sound; and in the second place to prevent the accidental occurrence of inflammation in these parts when it might be difficult to obtain relief.

DR. T. Y. SUTPHEN, of Newark: I have seen one or two cases of this trouble, which seems to be due to cicatricial closure of the external canal. It seems to me that the condition would be best spoken of as a cicatricial closure of this canal.

DR. A. MATHEWSON, of Brooklyn: A lady was under my care for some time with an eczematous condition of the external meatus. She then passed from observation. Some time later she presented herself with a disk-like closure of the external canal. This was not complete as there was a small opening in the centre. I dilated this opening with laminaria bongies and the ear was left in perfect condition.

DR. CHAS. H. BURNETT: I have seen several of these cases of dermoid diaphragms in the canal. Three of these were in private practice. One was in an old man and it remained imperforate during the whole time he was under observation. The other cases were perforate when they came to me. There was slight discharge which I checked and the perforation healed. In one case the discharge returned after a short time and the perforation reappeared. Under treatment it healed and I have reason to believe has remained closed since, a period of four or five years. In the other case remained closed for a year, when the opening returned with slight discharge. The discharge ceased under treatment, the opening closed and has remained closed.

EVENING SESSION.

DR. J. B. EMERSON, of New York, read a paper on

THE FLEXIBLE CATHETER AS A DRAINAGE TUBE: WITH CASES.

The author cited several cases exhibiting the use of the flexible catheter as a drainage tube. With deeply-seated inflammation of the auditory

canal or mastoid cells, maintenance of drainage through a fistula is a necessity; and to prevent closure of the fistula either by granular growth or natural healing is important. Dr. Emerson recommends the use of the flexible catheter as generally the best means to employ and states his reasons to be, the comparative comfort and safety, together with convenience of control by both surgeon and patient. The efficiency observed in his use of the flexible catheter was also referred to.

DR. CHAS. J. KIPP, of Newark, reported

THREE CASES OF TRANSIENT BILATERAL HORIZONTAL NYSTAGMUS IN CONNECTION WITH PURULENT INFLAMMATION OF THE MIDDLE-EAR.

Case 1.—A young man, 21 years of age, had had otorrhœa seven or eight years previously. Three months before coming under observation he had an acute exacerbation and suffered intensely with pain in the ear and head. The otorrhœa much diminished. Two or three weeks later he came stating that he saw objects double, was dizzy, and could not walk. There was marked nystagmus in a horizontal direction. The vertigo and nystagmus continued four days. With the cessation of the nystagmus the vertigo disappeared.

Case 2.—A young man treated six years previously for acute otitis media purulenta, ending in recovery, appeared in March with an acute attack. Paracentesis was performed. The pain, however, continued for a long time. Finally swelling developed behind the mastoid and this was accompanied with several epileptiform attacks. One day, pressing on the swelling, pus poured from the canal. With this there was a sudden jerk of the head and nystagmus. The latter continued for about ten minutes. This was produced every time pressure was made on the mastoid. The mastoid was subsequently opened. Since then there has been improvement.

Case 3.—A young man, after exposure, was seized with intense pain in the ear, followed by otorrhœa. When he came under observation there was great pain. This was not relieved by treatment but continued two or three weeks. Then a swelling appeared below the ear. This was incised and a large quantity of pus evacuated, with relief to the pain. Some days later while washing out the cavity, the fluid came through the ear when considerable force was used. At the same time there was a jerk of the head and nystagmus continuing several minutes. This could always be produced by making a forcible injection.

DR. O. D. POMEROV, of New York: Reference has been made to epileptiform symptoms in one of the cases. I have recently seen a case of epilepsy in which the exciting cause was suppuration of the middle-ear. With recovery from the ear disease the convulsions ceased and have not returned.

An Improved Aural Snare was exhibited by Dr. J. O. Tansley, of New York.

A paper by Dr. S. Sexton, New York, on *Foreign Bodies in the External Auditory Canal*, was read by title.

The following were elected

OFFICERS FOR THE ENSUING YEAR:

President—Dr. J. S. Prout, of Brooklyn.

Vice-President—Dr. Gorham Bacon, New York.

Secretary and Treasurer—Dr. J. J. B. Vermyne, of New Bedford, Mass.

Committee on Membership—Dr. A. Matthewson, Dr. D. B. St. John Roosa, and Dr. John Green.

Delegate to the Congress of American Physicians and Surgeons: Dr. W. H. Carmalt, New Haven. Alternate, Dr. G. Bacon, New York.

The Society then adjourned to meet at the Arlington Hotel, Washington, D. C., Tuesday, Sept. 18, 1888.

Medical Society of the District of Columbia.

Stated Meeting February 15, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

Dr. D. S. LAMB presented the specimen and read the history of a case of

TUMORS OF GLANDS,

which he thought were possibly syphilitic. The case was last attended by Dr. C. A. Norton, a licentiate of the Society, who furnished the following history: J. E. D., white, age 36, father of five children, three of whom died in infancy. He had been a farmer; latterly a coal dealer. Unfit for business for last two years. Was confined to house for last three months. Died February 7, 1888. Dr. N. had seen him only for the three days before his death.

There was much emaciation; body in a cold sweat; pulse 98, feeble, intermittent; temperature 101.8;° respiration 19, labored; skin a dirty yellow, smooth and shining. Lips and mucous membrane of mouth pale; tongue dry and brown, edges pale; parotid and submaxillary glands enlarged, especially the left; abdomen swollen, not tender; large, hard, well-defined mass in region of stomach; spleen large; inguinal glands enlarged, in the left groin as large as the fist; feet and legs swollen; sexual organs normal. Had had a feeling of burning in stomach for over a year. Much thirst; after taking fluids, vomited watery, brown, foul smelling liquid. Bowels loose; stools thin, streaked with blood, and pale green pus; often involuntary. Urine pale, cloudy, normal in quantity; involuntary. Patient restless; had pain all over; some dysphagia.

His grandfather died at 50 of cancer of liver;

grandmother at 70 of ulcer of stomach; father and mother alive and well; had thirteen brothers and five sisters, all alive but six who died of infantile diseases. Patient was not a drunkard, but a great smoker; contracted syphilis about fifteen years before death, from a colored servant in the family. Was treated for over a year and said to be cured. Three years afterwards had sharp pain in left hip, extending to back and legs; had to stop work; often had to walk the streets to ease the pain; could not sleep. Had much pain in bones of face and head. Was treated again for four years without benefit. Began to lose flesh; stomach became weak and food distressed him.

Post-mortem examination by Dr. D. S. Lamb. Head and spinal cavity not examined. Lymphatic glands near angle of jaw enlarged. Both pleural sacs contained a large quantity of serum; so much in the left sac that the lung was nearly collapsed; some old adhesions on right side. Lungs themselves normal except several hard white nodules, about one-eighth inch in diameter, under the periphery; apparently obsolete tubercle. Heart appeared normal; not opened. There were a number of firm flat masses on posterior surface of sternum and similar ones on each side of spine between 4th and 5th ribs; doubtless enlarged glands. Liver large, congested. Gall bladder distended with pale green bile. Spleen enlarged, about 20 oz. in weight, and congested. Pancreas normal. Stomach showed some congestion towards pylorus and contained some mucus. Small intestines normal. Large intestine contained scybala. Kidneys large; their cortex pale. Bladder distended with urine. Prostate normal. Lumbar, iliac and inguinal glands much enlarged and firm. Penis showed no scar.

DR. SMITH was one of those physicians who had seen the patient from whom Dr. Lamb had removed the glands. He had consulted him about four months ago, when the glands in the left groin were enlarged; those in the right only slightly. He came two or three times but there was no improvement, and as operative interference was suggested, he was frightened and never returned.

DR. ACKER had examined the specimen and thought it was lymphadenoma.

[The members of the committee on microscopy reported on the glands as follows:

DR. ACKER: I find that the cells are increased in number, and the reticulum thickened. Some of the cells are large and multinuclear. In some of the sections the sinuses and follicles cannot be seen. The adventitia of the vessels is thickened. The growth is, I think, a hard lymphadenoma or lymphosarcoma (Ziegler).

DR. SCHÄFFER: I think the tissue is an enlarged and infiltrated gland, showing the stroma and round cellular elements—no traces of malignancy].

DR. T. C. SMITH presented the stomach of a young man who had committed

SUICIDE BY TAKING "ROUGH ON RATS."

History.—A young man, æt. 19, ate his breakfast about 9 o'clock February 14, and then left home. About fifteen minutes afterwards he returned with a box, procured a glass, and went to the bath room. He went out again, but returned in about an hour and requested his brother to go to work for him. Soon after he began to vomit, and the vomiting soon became incessant, and he fell to the floor from exhaustion. About noon he told his parents that he had taken "rough on rats." The family sent for Dr. Smith, but he was not at home, so they got Dr. Warwick Evans to go to see the patient. Dr. Evans saw him four hours after the poison had been taken. Emetics of zinc and ipecac, dialyzed iron in large doses, and stimulants were given. Dr. Smith saw him about 1.30 o'clock. He was then in collapse. Whisky was freely administered hypodermatically, and hot bottles were applied, but he died at 4.30 P.M., seven hours after taking the poison.

Dr. Tyler made the necropsy. The kidneys were congested. The stomach was hyperæmic, and seemed to be denuded of its mucous membrane as if it were gouged out with some mechanical irritant.

Dr. Smith had presented the specimen for the sake of exciting some interest in the discussion of the subject in order to see if the society could not take some action to prevent the sale of this article which had become the popular drug for the suicide.

DR. BERMAN: It is useless to try to regulate the sale of such poisons as long as the druggists are allowed to sell poisons, for anybody can go into almost any drugstore and get the most deadly poison by simply asking for it. The law to be effective should prohibit the sale of poisons except when authorized by a physician.

DR. BUSEY: What is the composition of "rough on rats?"

DR. SMITH: The principal constituent is arsenic, but some contend that it also contains phosphorus and ground glass. It cannot contain phosphorus because that drug cannot be kept in a dry state, as in this preparation. He thought the principal ingredient was arsenic, because the directions given on the label for poisoning are similar to those commonly given in arsenical poisoning.

DR. KLEINSCHMIDT had a case of poisoning by "rough on rats" about six months ago. He asked Dr. Patterson, who had made the post-mortem examinations in fifteen or twenty cases, what he thought the poison consisted in, and he expressed the opinion that besides arsenic and phosphorus it also contained some mechanical irritant. He also suggested that there was no

use in trying to save them by remedies, as all that took the poison died. His patient died, but he could not get a necropsy. The specimen presented has a graty feeling. He thought the appearance of the intestinal tract in such cases gave evidence of an inflammatory condition produced by some mechanical irritant. In his case after the vomiting had stopped there still remained gastritis, of which he died.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Epistaxis of Brightic Origin—Talc in Infantile Diarrhœa—Value of Bichloride Solutions—Dangers of Intra-uterine Injections—Incontinence of Urine in Children.

At a recent meeting of the Société Médicale des Hôpitaux Dr. Gaucher read a paper on *Epistaxis of Brightic Origin*. These cases, he said, are very obscure, and the cause being unknown, it is often very difficult to arrest the hæmorrhage. A man aged 33 years, distiller, and alcoholic, was admitted into his ward in the hospital on the 20th of May last, with profuse hæmorrhage from the nose, which had been going on for three days and which had resisted plugging and the application of a blister to the hepatic region, in conformity with the recent theory that epistaxis is of hepatic origin. In the present case, however, Dr. Gaucher, suspecting a latent interstitial nephritis, examined the urine and found in it a great quantity of albumen. He prescribed an absolute milk diet and a mixture of the extracts of cinchona and of ratanhia. From that moment the hæmorrhage diminished progressively and on the 24th of May it had ceased entirely. It is therefore important, concluded Dr. Gaucher, that when one is in the presence of an epistaxis of an unknown cause, the urine should be examined. Dr. Huchard had under his observation for several years a patient in whom repeated attacks of epistaxis were the precursory signs of an interstitial nephritis which showed itself tardily. The patient was a man of 44 years, of gouty parents, and was gouty himself, presenting the characters of "arthritis." During his youth he had repeated attacks of epistaxis. In 1879 they were of a grave character, in 1882 one of the attacks was so severe that it was necessary to plug the nasal fossæ. It was only in 1883 that albumen commenced to appear in the urine. Since then the phenomena of interstitial nephritis dominated the scene. Transitory aphasia in 1884, dyspnœa and other uræmic troubles determined death in 1885. Dr. Huchard remarked that this case was interesting in regard to the repeated attacks of epistaxis and to the renal malady. The

author added that arthritism is to the arteries what rheumatism is to the heart. It acts specially on the arteries, as it always determines arterial hypertension and arterio-sclerosis.

At the same meeting Dr. Sevestre, Physician to the Children's Hospital, brought to notice the efficacy of *Talc in Infantile Diarrhœa*. He tried this substance, which was first indicated by Dr. Debove, in 7 children in his ward affected with that disease. The talc was administered in daily doses of from 20 to 30 grams mixed in milk, which succeeded in the cases where the bicarbonate of soda and lactic acid were powerless. Three children were cured in from four to five days, in the four others the diarrhœa had diminished and then disappeared about the seventh day. All the children had increased in weight.

Dr. E. Laplace writes in the *Journal des Connaissances Médicales* that, after a series of experiments, he found that solutions of the bichloride of mercury, in the proportion of a thousandth part, do not completely kill the microorganisms with which they are in contact. He attributes this to the production, with the albumens of insoluble compounds of the albuminates of mercury. In adding to the solution of the bichloride of mercury some hydrochloric acid, the albumen contained in the serum of the blood is not precipitated. Nevertheless, as the hydrochloric acid may after a time form with the albumens insoluble products, Dr. Laplace has replaced the hydrochloric acid by tartaric acid. Acting on these data, the author recommends the following solution for the washing of wounds: bichloride of mercury 1 part, tartaric acid 5 parts, distilled water 1000 parts. For antiseptic dressings he recommends that the bandages, linen and cotton, should be steeped in the following solution: bichloride of mercury 5 parts, tartaric acid 20 parts, distilled water 1000 parts. The cotton should remain about two hours in this solution, and afterwards dried. Clinical experience has confirmed the efficacy of these antiseptic solutions, and in one case in which the subject was affected with a large abscess, after having opened and washed out the latter, a plug imbibed in the bichloride acid was introduced into the purulent cavity. At the end of six days there was no more pus, and from that time the cicatrization was effected without suppuration.

In the *Nouvelles Archives d'Obstétrique et de Gynécologie*, Dr. Mangin, while vaunting the utility of intra-uterine injections, both as a prophylactic and curative measure, indicates the accidents which these injections are liable to cause. These accidents are of three orders. 1. Accident of retention, 2. septic accidents, 3. nervous accidents. The first order may be explained by the slow absorption of the liquid injected and retained in the uterine or vaginal cavity. By the penetration of the liquid into the peritoneum by the Fallopian tubes. By the direct penetration into the circula-

tion, by the venous sinuses of the liquid injected. This variety is no doubt the most common and at the same time the most terrible. The septic accidents, constituted by shiverings followed by fever, simulating a fit of intermittent fever, appearing always after a uterine irrigation and ceasing only when the injections are suppressed, are manifestly in correlation with these injections. The nervous accidents, which are always incriminated as soon as any complication after an injection arises, should be looked upon as exceptional. After having fully described the mechanism of the three orders of accidents, the author states that the nervous accidents are without gravity. The same cannot be said of the toxic and febrile accidents, which ought and can be avoided by certain precautions, the principle of which are: the choice of a catheter by which the return of the liquid is insured, and attention should be paid not to raise more than 30 centimetres above the bed of the patient the recipient containing the liquid.

Dr. Harkin, whose note on the treatment of incontinence of urine in children was reproduced in the *Revue Obstétricale et Gynécologique*, thinking that this affection is due to a congestion of the medulla oblongata during the horizontal position in bed, has employed dry cupping, or scarifying, in several cases, to the back of the neck, or a blister of 6 centimetres by 10 was applied as high as possible to the back of the neck. This last measure was the most frequently employed, and it was very rarely necessary to have recourse to a second application.

A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Causation and Treatment of Summer Diarrhoea of Infants—Microorganisms of the Stomach and Intestines in Summer Diarrhoea—Microscopic Appearances of the Stomach and Intestines in Summer Diarrhoea—Digestive Power of Pepsin—Action of different Agents on the Pus Germ.

The May meeting of the Section of Pediatrics of the Academy of Medicine was one of unusual interest, and the principal feature of it was a paper by Professor Victor C. Vaughan, of Ann Arbor, Mich., on *Experimental Studies on Some Points Concerning the Causation and Treatment of the Summer Diarrhoea of Infants*. Without attempting any exhaustive consideration of the subject, he said he would express the views which his investigations had led him to adopt in a series of propositions.

The first proposition was that the factor most frequently operative in summer diarrhoea is found in the food of the infant. Heat operated in two

ways. In the first place, a certain degree of heat was required for the fermentation of food before being taken into the body; this facilitating marked and rapid changes subsequently. In the second place, it depressed the nerve centres, so that the tissues lost their tone, and the normal power of resistance to toxic influences became impaired.

The second proposition was that the changes in the food which prove harmful are fermentative in character; or, in other words, due to microorganisms. It was a universally accepted fact that infants nursed at the breast were very much less liable to summer diarrhoea than those fed upon the bottle. In examining the reasons for this it was found that there were certain differences in the chemical composition of human and cow's milk; but this was not the most potent cause. It had been ascertained that milk taken directly from the healthy animal, whether the human being or the cow, contained no germs whatever; while after it had been allowed to stand for any length of time it invariably contained germs. Thus, he had found that milk taken fresh from the cow could be preserved indefinitely in a sterilized tube, while good market milk, purchased from a reliable dairyman, soon underwent coagulation when kept in the same way.

But if this were the case, why was it that infants nursed at the breast ever had cholera infantum or other diarrhoeal diseases at all? This might be explained in several ways: In the first place, while a healthy woman's milk contains no germs, an unhealthy one's does; so that if the mother was not in a sound condition, her milk might be affected in the same way as cow's milk after standing for some time. There were, in addition, many other ways in which germs might find their way into the infant's system; as, for instance, from the breast of a woman who was not cleanly in her habits or who was suffering from sore nipples or diseased breast. Still again, few of the articles which infants in tenement houses were liable to come in contact with were free from germs, and dirty floors were a common source of infection. Lastly, there was always the possibility that harmful germs might be inhaled from the air.

It was true, however, that when germs were contained in the food they were taken into the system in greater quantities than in any other way, and it was remarkable how quickly a few germs would render a large quantity of milk unfit for use. Thus, if half an ounce of contaminated milk were introduced into a gallon of pure milk, and the whole left in a sterilized vessel at the temperature of the body, in a short time the entire quantity of milk would be contaminated and filled with germs. He had never seen anything to lead him to suppose that the germs of summer diarrhoea were given off by the lungs and skin; but there was abundant evidence that

they were excreted from the intestines and kidneys. It was, therefore, highly important that the discharges of infants suffering from diarrhœa should always be promptly disinfected. Physiological investigations, he went on to say, showed that the digestion of milk was almost entirely carried on in the small intestines, the stomach having little to do with the process; and clinical observations confirmed the truth of this.

The third proposition was that the microorganisms which produce simple catarrhal or mucous diarrhœa are only putrefactive in character, but those which give rise to choleric or serous diarrhœa are more than putrefactive, being essentially pathogenic. Dr. Vaughan does not believe in the unity of the microbic agents met with in all the forms of summer diarrhœa. The choleric disease differed, he said, from the catarrhal in its symptoms and its pathology, and there was also good ground for regarding it as differing in its etiology. The poison of choleric diarrhœa acted directly on the nervous system, probably more particularly on the sympathetic system, while in catarrhal diarrhœa there was merely a local irritation. A study of the bacteria met with went to show, therefore, that there was more than one affection comprehended in the general designation, summer diarrhœa of infants.

The fourth proposition was that the bacteria prove harmful by splitting up complex compounds and elaborating chemical poisons. With our present knowledge of bacteriology we expected to find the germ of each infectious disease capable of producing its characteristic ptomaine; and he was convinced that the ptomaine of cholera infantum was tyrotoxin. While the germ producing this ptomaine had not as yet been identified, however, we knew something of its characteristics. Thus, it did not act below a temperature of 60° F., and it was anaerobic. That tyrotoxin was the ptomaine of cholera infantum was rendered highly probable by the symptoms and anatomical lesions produced in animals by this agent. The following are among the reasons, then, for regarding it as the ptomaine of the disease:

1. Tyrotoxin results from the putrefaction of milk, and cholera infantum is almost entirely confined to milk-fed children and those subject to conditions favorable to the development of this ptomaine.

2. Tyrotoxin has been found in milk taken by children just before an attack of cholera infantum.

3. The symptoms of the disease continue to increase as long as the administration of milk is kept up.

4. The symptoms of the disease are identical with those produced in animals by tyrotoxin.

5. The post-mortem results are also identical.

The fifth proposition was that the most efficient treatment will consist in giving attention to the

preparation of food, the methods of feeding, and the sanitary surroundings of children under the age of 2 years. There could be no doubt of the fact that the infant digests the milk of the mother or wet-nurse better than cow's milk. It was also a fact that mother's milk contains more fat than the child could utilize. Artificially fed infants were more likely to be overfed than those which were nursed, because in the case of the latter the supply of nourishment was limited and not so easily obtained. This overfeeding rendered the child more subject to harmful influences, and the proteids taken into the system which could not be assimilated were constantly liable to contamination by bacteria. Dr. Vaughan then went on to say that he objected to complete artificial digestion of food, 1, because, if this was continued for any length of time, the digestive organs would become permanently enfeebled, and 2, because the too rapid absorption of peptones was injurious. The long-continued use of artificially digested food was, therefore, irrational and unscientific. In order to protect children as far as possible from the danger of cholera infantum, great care was necessary in the preparation of their food, and he had elsewhere laid down certain rules for the preservation of milk which seemed to him of service towards this end. As to the need of attention to the sanitary surroundings of infants he thought it was scarcely requisite to say anything on this occasion, as all were so fully alive to its importance.

The sixth proposition was that, in the curative treatment, the destruction of the bacteria which are causing the abnormal fermentation is essential. How, then, could this destruction be accomplished? One of the surest methods of destroying the life of any plant or animal was to completely withhold its food supply. A radical change of diet, consisting of the entire exclusion of milk, and the substitution for it of a meat diet, was, therefore, one of the most certain methods of relieving the system of these deleterious bacteria, and curing the disease due to their presence. He had found that if contaminated milk was added to beef-tea or to egg-albumen, and the liquid then left in sterilized vessels at the temperature of the body, the number of bacteria did not increase; thus showing that they could no longer produce their chemical poison, tyrotoxin. In milk, however, these bacteria found the most favorable conditions for their development and the production of their ptomaine. In summer diarrhœa, and especially cholera infantum, the withdrawal of all milk from the child was, therefore, of the greatest importance.

In addition to this change of diet, various antiseptic agents might be employed in the treatment; and in order to discover which were the most efficient, Dr. Vaughan had made a series of experiments for the purpose of testing the action of different germicides, or supposed germicides, on

tyrotoxin; the drug under experiment being introduced into a bottle containing milk and the poisonous ferment. In this way he ascertained that 1 part of bichloride of mercury to 2,400 parts of water was efficient in neutralizing the poison. One part of naphthalin to 200 parts of water was wholly without effect, while 1 part of sodium salicylate to 200 parts of water was efficient. It seemed probable, in the latter case, that the constituents of the salt became separated, and that salicylic acid was in reality the active agent. Resorcin, in the proportion of 1 part to 200 of water, was likewise efficient, but was inefficient when used in a weaker solution than this.

Dr. Vaughan's paper was followed by one from Dr. W. D. Booker, of Baltimore, on the *Microorganisms of the Stomach and Intestines in Summer Diarrhea*, in which he stated that since he read his paper on this subject before the Section of Diseases of Children of the Ninth International Medical Congress he had discovered several new forms of bacteria; so that he had separated in all twenty-three varieties from the dejecta of nineteen children suffering, with one exception (a healthy infant), from diarrhoeal diseases. Many of the varieties, however, bore a close resemblance to each other, both morphologically and biologically. Having described the microscopical changes and the changes in color produced by the introduction of the various bacteria into pure milk and milk mixed with bile in large and small quantities, he stated that none of the varieties produced diarrhoea in animals, although some of them had other toxic effects.

Dr. L. Emmett Holt then read a paper describing the *Microscopic Appearances of the Stomach and Intestines in Summer Diarrhea*. His observations included eighty-two cases, which he divided into the following three classes: Those in which the disease lasted four days, or less; those in which it lasted from four to ten days; and those in which it lasted over ten days, the latter constituting fully one-half of all the cases. He then went on to describe in detail the microscopical appearances in the three classes of cases, which were illustrated by a number of carefully prepared plates, and which went to show that the longer the disease lasted the more profound were the pathological changes in the tissues. In the third class, then, often deep ulcerations, and severe character of the lesions in general, clearly indicated why it was that in protracted cases relapses were so apt to occur, and how necessary local treatment was for the cure of the intestinal ulcerations.

The chairman of the Section, Dr. J. Lewis Smith, having read the report of the microscopical appearances noted by Professor Wm. H. Welch in a case which had occurred in his service at the New York Infant Asylum, gave the results of an investigation made at his request, by a well-known chemist, of the relative *digestive power of the vari-*

ous brands of pepsin now in the market. The same chemist, he said, had also made a series of experiments for the purpose of ascertaining what effect, if any, the different germicidal agents now coming into vogue in the treatment of summer diarrhoea had on the process of digestion; and it was a point of some practical importance to know that these agents do not appear to retard digestion to any extent that would lead us to hesitate on this account to employ them.

Dr. A. Caillé said that the practical outcome of the evening's discussion was about as follows: If we admit the bacterial origin of the summer diarrhoea of infants we must admit that its principal cause is to be found in milk; and if this is acknowledged, we are forced to the conclusion that the ordinary methods of preparing and preserving milk are altogether faulty. At the February meeting of the Section on Pediatrics he had called attention to the apparatus devised by Dr. Soxhlet, of Munich, by means of which the preparing and feeding of sterilized milk can be readily carried out in every family. Since the February meeting a New York firm, at his suggestion, had prepared an apparatus (which they were now ready to supply in any desired quantity) similar to that of Soxhlet, consisting of a tray holding ten feeding-bottles with combination stoppers, and a pot to boil them in. These, together with extra bottles, rubber nipples, a cleaning-brush and a tin dipper for warming the milk immediately before feeding, were all packed in a box ready for transportation. In using the apparatus each bottle is filled to one-half inch of its neck with the food, properly prepared in accordance with the age and condition of the infant, and a perforated rubber stopper pressed well into the neck of the bottle. The bottles are then set in the tray, and the tray in the pot containing water up to the neck of the bottles, and the water is brought to the boiling point. After the water has boiled for ten minutes each bottle is hermetically closed by pressing a glass stopper down through the perforated rubber stopper. When the boiling is continued for ten minutes longer the tray is lifted out and set aside to cool; after which it should be kept on ice or in a cool place until all the milk has been used. Milk prepared in this way can be kept sweet and pure for any length of time required.

The apparatus, Dr. Caillé said, could be purchased for \$4, but as this was probably too expensive for the poor, he would recommend that a mother who was unable to buy one should get six or eight bottles provided with the combination stopper, and boil the milk for her infant (as prepared for use) in them.

Dr. J. E. Weeks said that a year ago he had made a series of experiments in regard to the action of different agents on the pus germ. He found that salicylate of sodium was inert, while salicylic acid was actively germicidal; and he be-

lieved, therefore, that Prof. Vaughan was right in concluding that in his own experiments the salt became changed, and that its germicidal value was really due to the salicylic acid that was liberated. Naphthaline he found germicidal in rather strong solutions, while bichloride of mercury stood rather high. Nitrate of silver also stood high.

In bringing the discussion to a close Dr. Vaughan said that in his own experiments it was probable that the lactic acid present set some of the salicylic acid free from the sodium salicylate. In Dr. Weeks' experiments, there being no such agent present, the salt would naturally remain unchanged. As to the practical use of germicides in the treatment of summer diarrhoea, the dose of the bichloride of mercury required would be about one-twenty-fifth of a grain, and as this seemed rather large for young infants, it would no doubt be safer to give five grains of salicylate of sodium, which according to his tests was the dose this agent required for the purpose desired.

Dr. Smith having inquired whether it was a fact, as supposed by some, that calomel was changed into the bichloride of mercury after being taken into the system, Dr. Vaughan replied that this was undoubtedly the case with a certain proportion of the amount taken, and it was probable that the change was especially likely to take place when the calomel was given in small doses.

P. B. P.

SHALL I REMOVE TO THE CITY?

Dear Sir:—In May or June the practice of the country physician grows light and a needed rest is enjoyed after the arduous labors of the early spring. Then the doctor gets his books posted, makes out his birth and death reports, brushes up his office and musters courage to present some of his bills.

He remembers that tradesmen have presented their bills to him with commendable promptness and wonders why the medical profession alone conducts business in such a lax and unbusiness-like manner.

After familiarizing himself with the appearance of a statement in which he is creditor he concludes it will not ruin his business to send out a few of these statements by mail. The first lot are probably sent to long-time delinquents who have found it cheaper to change doctors than pay up. Next the doctor meets a man on the street and reminds him that it is time to settle, and with the account in his pocket, perhaps, he asks him to the office to see how much it is. After he has made a few collections and feels less like a pauper he puts on a bolder front, begins in earnest, and as the exchequer is replenished the tired feeling he thinks he has had so long, wears off and "Richard is himself again."

Now it is time to attend some of the annual society meetings. The County District, State or National Medical Associations are in session and the doctor, from interest in the work and want of recreation, goes to the city.

Meeting the city physicians with their apparent advantages of being in the range of medical colleges and hospitals and the city societies in which interchange of ideas among the best of the profession enlarges medical skill, the strong temptation comes to remove to the city. The ease with which professional work is done stands out in marked contrast with the drudgery in mud and rain through which the country doctor has just passed. The greater social advantages, the better fees and the possibilities of specialty practice all conspire to tempt the ambitious young man almost to the point of yielding.

Wealth is concentrated in the cities. The best price is paid for goods of the best quality there. The successful merchants of the towns frequently go there to recruit the ranks of city merchants. The best ministerial talent is called there at an increased salary. Why should not the doctor go? Obviously we cannot all go, and it is the city's immense advantage that we cannot. A great many do go from the larger towns throughout the country and the eminence of a few attest the wisdom of the change for them. Where the ambition that spurred them on was based on superior judgment and a degree of skill commensurate with the years of study and experience, success has crowned their efforts. Of the multitude of failures we hear nothing. With the physician, however, as compared with the case of the merchant or minister there is a great difference. The merchant uses his acquired capital, gets a good location and stock, and a few page advertisements puts his business on a self-sustaining basis.

The minister called to the city has his congregation as a constituency awaiting him, and a church reception makes him at home among his people.

The doctor may have a reputation at his present place, but it has the faculty of staying close home. His work in the journals or societies may have made his name familiar to the best of his city co-workers, but it is not their special province nor care to introduce him to the people, the source of his expected income.

Privilege to advertise cannot help him, already quacks enjoy that and are adepts in its use; and the abandonment of the time-honored regular methods would be a damaging confession. The new doctor in the city then must begin at the bottom and go through the drudgery of building up a business anew with no advantage over the new graduate except so far as his savings, his experience and acquaintance may help him to a comfortable location and professional standing. In the vast majority of cases, had the doctor not

better avoid the city? He who succeeds in the country or larger towns can do still better than if his ambition impels him to improve his business. He can have the world for an audience if he has anything of universal interest to say. If he desires it he can extend his field of labor almost indefinitely if there is anything he can do better than his professional brethren. His expense account may usually be smaller than that of his city friend in proportion, as his town is smaller.

The out-door work which is often a ground of complaint may perpetuate a vigorous physical state that a city office might ruin. A family vigorous in the free air of a country-home may suffer in bodily health, possibly in moral tone, from the different atmosphere of the city.

Years of acquaintance and established business enable the country physician to select his cases and avoid the most laborious work, except where compensation is adequate. The years he has spent, instead of being virtually lost through removal, constitute so much capital which shall contribute to his comfort and gain as the years go by; and judicious investments made in the years of prosperity obviate the need of hard work in old age.

In the more varied demands of the country practitioner more study is required to cover the larger field of work, but by way of compensation has he not the consciousness of being a more useful member of his community?

COUNTRY DOCTOR.

MISCELLANEOUS.

THE RAINS COUNTY (TEXAS) MEDICAL ASSOCIATION was organized on June 20, with Dr. J. F. Bertram, of Yantis, President, and Dr. E. A. Swepston, of Point, Secretary.

THE KENTUCKY STATE MEDICAL SOCIETY met at Crab Orchard Springs on July 11, 12, and 13. Dr. L. S. McMurry, of Danville, is the President for the ensuing year.

THE TEXAS MEDICAL COLLEGE AND HOSPITAL, has been organized at Galveston, and it is thought that it will open in October. It will require three year's study and three full courses of lectures.

THE MEDICAL AND SURGICAL SOCIETY OF WESTERN ILLINOIS will hold its next regular meeting in the Court House at Jerseyville, Wednesday, August 1. Morning session 10.30; afternoon at 1.00 o'clock.

DR. CHARLES W. PURDY, of Chicago, was married to Miss Florence Elise Hoffman, daughter of Mr. George W. Hoffman, of Oak Park, Ill., on Tuesday evening, July 24, at Grace Episcopal church, Oak Park.

AT THE COMMENCEMENT EXERCISES of Union College, June, 1888, the honorary degree of LL.D., was conferred upon Mr. Lawson Tait, F.R.C.S., Professor of Gynecology, Queen's College, Birmingham, England.

THE AMERICAN RHINOLOGICAL ASSOCIATION will hold its sixth annual meeting at Cincinnati, on September 12,

13 and 14, 1888, under the Presidency of Dr. C. H. von Klein, of Dayton, O. The subjects for discussion are: Etiology and Pathology of Nasal Diseases; Relation of Nasal Diseases to other Diseases, including the Brain and Nervous System; Treatment of Nasal Diseases by Local and Constitutional Medication; Treatment of Nasal Diseases by Surgical Means; and Hay Fever (Pruritic Rhinitis), Pathology and Treatment. A large number of papers will be read on these subjects.

AMBULANCE INSTRUCTION FOR RAILWAY MEN.—The Mayor of West Ham recently presented certificates and badges of the St. John Ambulance Association to fifty-three *employés* of the Great Eastern Railway at Stratford. During the winter two courses of instruction were given at Stratford by Dr. Louis Parkes, medical officer of the Great Eastern Railway Accident Fund, special attention being given to practical bandaging work. Over 4,000 men are employed by the railway company at their Stratford Locomotive Works, and the advantages of having certificated men amongst this number to render first aid in cases of accident are highly appreciated, both by the railway authorities and by the men themselves. It is very desirable that a proper ambulance corps should be formed in these large works.—*British Medical Journal*, July 7, 1888.

NEW BOOKS RECEIVED.

- The Goulstonian Lectures on Insanity in Relation to Cardiac and Aortic Disease and Phthisis, by William Julius Mickle. Publisher, H. K. Lewis, London.
 The Applied Anatomy of the Nervous System, by Ambrose L. Ranney. D. Appleton & Co., New York.
 A System of Obstetrics by American Authors. Edited by B. C. Hirst. Vol. I. Lea Brothers & Co., Philadelphia.
 Practical Electro-Therapeutics, by Wm. F. Hutchinson. Records, McMullin & Co., Philadelphia.
 Physicians' Leisure Library, No. XI. The Disorders of Menstruation, by E. W. Jenks. Published by George S. Davis, Detroit.
 The Ethics of Marriage, by H. S. Pomeroy. Prefatory Note by T. Addis Emmett, and Introductory by Rev. J. T. Duryea. Funk & Wagnalls, New York.
 Die Stielbehandlung bei der Myomtomie. Von Dr. Paul Zweifel. Stuttgart: Ferdinand Enke. 1888.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 21, 1888, to July 27, 1888.

- Thomas A. McParlin, Surgeon U. S. Army, leave of absence extended one month. Par. 10, S. O. 160, Dept. of the Platte.
 Surgeon William D. Woolverton, U. S. Army, leave of absence extended twenty days. S. O. 142, Hdqrs. Div. of the Atlantic.
 Asst. Surgeon Joseph K. Corson, U. S. Army, leave of absence for one month, with permission to apply for an extension of one month. S. C. 78, Hdqrs. Dept. of the Columbia, Vancouver Bks. W. T., July 13, 1888.
 Capt. William B. Davis, Asst. Surgeon U. S. Army, will proceed to Ft. Niagara, N. Y., for the purpose of completing his target practice for this year with Company C, Twenty-third Infantry. Upon completion of this duty Capt. Davis will return to Ft. Porter, N. Y. S. O. 145, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, July 17, 1888.
 First Lieut. Leonard Wood, Asst. Surgeon, U. S. A., is relieved from duty at Ft. Huachuca, Ariz. Ter., to take effect at the expiration of his present leave of absence, and will report to the commanding officer at Ft. McDowell, Ariz. Ter. Par. 14, S. O. 162, A. G. O., July 14, 1888.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, AUGUST 4, 1888.

No. 5.

ORIGINAL ARTICLES.

FOOD AS A CAUSE AND CURE OF DISEASES OF THE NERVOUS SYSTEM.

Read in the Section on Practical Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY EPHRAIM CUTTER, M.D., LL.D., HON. F.S.Sc.,
LOND.

OF NEW YORK CITY.

The aim of this paper is simply to tell how, when I was anxious to be set right, it was done. This was one of the tasks set me by my father, the late Dr. Benjamin Cutter, before I entered upon the study of the profession, when I asked to study the causes of disease. Were he living now, after the lapse of about thirty-five years, he would rejoice in the progress made, and if any advantage is derived from this presentation, it is due to his wise advice expressing medical agnosticism as to the causes of diseases of the nervous system.

Food as a Cause and Cure of the Neuroses.—This may seem paradoxical. A knife carves your dinner and cuts your throat. Water is essential to life and health, but to hold a man under it for five minutes is unhealthy. Fire cooks our meals and burns our houses. Without food, life ceases; but food produces colic, convulsions, fatty degeneration of tissues, numbness, paralysis, locomotor ataxia, impaired intellect, etc., sometimes death. On the other hand, food may be used to restore health to the nervous system.

To be sure, the nerves are implicated more or less in all diseases, as they pervade every organ, even the teeth, and without them there is no life. Food is just as pervasive. It enters into the treatment of all diseases and surgical affections. No food, no life.

The following diseases, in my opinion, are a good deal neurotic, though not so understood:

1. Consumption of the lungs is partial paralysis and interstitial death. The paralysis arises mainly from the carbonic acid in the intestines, which paralyzes the epithelia of the intestinal walls and makes them admit things into the blood they were meant to keep out. The food fermentation produces the gas.

2. Chronic diarrhoea or consumption of the bowels is also one form of the above. The col-

loid masses of sticky, adhesive and gelatinous mucus come from partially paralyzed mucous cells, and just the same in

3. Goitre, ovarian tumors, etc.

4. Neurasthenia in men is a paralytic disease induced by a catarrh of the spermatic and prostatic ducts caused primarily by fermenting food.

5. Pharyngitis sicca and many of the throat affections are due to improper feeding.

6. Constipation, I think, is often due to a lack of nerve force in the food, etc.

Our subject is limited to special feeding and their neurotic results. These are practical clinical questions. They can be studied by physicians on their own persons, and there is no difficulty in practically verifying the statements to be made. If any choose not to accept these diets, it is asked that they will not reject them before thorough personal tests are made; as farmers test agricultural questions on their own farms. Several sets of evidence should be had; so if several gentlemen conclude to make tests, they should combine their evidence and base the final decision on the sum of their evidence.

To be more particular, what affections of the nervous system do baked beans produce? I think it best to quote from a work in which the subject is fully reported,¹ (see note), which I endorse, and which may be referred to by those that wish to explore a mine of invaluable research as to foods.

The author in 1854 fed on baked beans and coffee exclusively—in sedentary life. In three days his head was dizzy, his ears rang, his limbs prickled, and he was wholly unfitted for any mental effort. There were other important clinical results, but only the neurotic will be given in this paper. In 1856 he repeated the experiments on himself associated with six well and hearty men—laborers, selected from about 100 subjects—hired to live with him on this diet, in sedentary life. The following are the symptoms affecting the nervous system: Diet, baked beans and coffee at meals; cold water midway between meals. *Résumé* by days for brevity.

Third day. Colic in three men; ears ring and dizzy in two; head swims in one.

¹NOTE. "The Relation of Alimentation to Disease." By J. H. Salisbury, M.D., LL.D. New York: J. H. Vail & Co., 1888.

Fourth day. Ears ring, dizzy, colic, heads swim.

Fifth day. Ears ring, all; colic, five; bewildered and confused, three.

Sixth day. Colic, five; ears ring, five; dizzy, five.

Seventh day. All dizzy and ears ring. Deafness in one. Confused and bewildered, five.

Eighth day. Hands and feet prickle; feel strangely and confused.

Ninth day. Hands and feet prickle; bewildered.

Tenth day. Hands and feet numb; dizzy.

Eleventh day. Heads feel empty, eyes staring. Strange, much bewildered, ears ring.

Twelfth day. Walk as if intoxicated. Head numb and vacant; feel lost; feet and hands prickle.

Thirteenth day. Hands numb. Reel in walking. Gait unsteady; feel weak and exhausted, forgetful and feel strangely; legs and feet numb; feel drunk.

Fourteenth day. Feel intoxicated. Legs and feet numb. Ears ring, dizzy, head vacant, eyes staring; numb, reel in walking, gait unsteady.

Fifteenth day. Walk with difficulty, feel drunk and lost. Hands and feet prickle, stagger in walking, feel light-headed.

Sixteenth day. Ears ring. Bewildered, eyes vacant, head dizzy. Tired and strange; feet drag; hips, feet and legs numb.

Seventeenth day. Feet and hands prickle; legs and feet numb; gait unsteady. Feel very weak and bewildered, reel in walking, feet drag in walking; eyes vacant and glaring.

Eighteenth day. Walk with difficulty. Weak and smothering feeling at times; cannot walk straight; feel as if they could not breathe freely, heart palpitates on exertion. Nervous; feet drag in walking; heart pains.

Nineteenth day. Experiments suspended, as men were so forlorn and dilapidated.

Cure.—These cases were all cured in four days by a diet of broiled lean beefsteak freed from fat and white fibrous tissue and seasoned with butter, pepper and salt; clear tea and coffee for drinks. This was because the symptoms were acute.

Oat-Meal.—Four well men, laborers, while in sedentary life, lived on oat-meal porridge seasoned with butter, pepper and salt, cold water for drinks between meals, coffee with sugar and milk at meals. To save space this is given as one report. 1857. Nervous symptoms found:

Third day. A dull, heavy feeling for all.

Fourth day. Slight colic.

Eighth day. Head dull, aching, dizzy. Colic; bewildered; ears ring.

Ninth day. Feet prickle. Ears sing.

Tenth day. Dull and stupid, dizzy, headache, colic, feet and hands prickle, abdomen lame as if bruised, pain in back, feet and hands prickle.

Eleventh day. Pain in head, ears ring; limbs heavy; stupid and dull. Breathing oppressed on exertion. Head dizzy and mixed, memory poor; lazy.

Twelfth day. Cardialgia. Feet cold; forgetful; colic; head confused; feet and hands prickle; back weak; singing in ears. One thinks he is getting crazy. Feet and hands partially numb.

Thirteenth day. One thinks he is losing his mind. A choky feeling while swallowing. Awoke very tired, head mixed, feet and hands numb, heart irregular.

Fourteenth day. Sleep heavy and bad dreams. Head bewildered, hands and feet prickle, nightmare, reels in walking, back aches, unsteady in walking.

Fifteenth day. Bad dreams, stupid on rising. Ears ring; forgetful. Legs not under perfect control, unsteady in walking. Stupid; sleep disturbed.

Sixteenth to twenty-fourth day. Head more mixed and confused, eyes blur in reading. One "feels as if his mind was giving way." Frightful dreams, colic pains, numbness and weight in limbs, eyesight growing dim, neuralgia all over. One sometimes sees double. Some imagine they see snakes, devils and bad characters. Talk in sleep; loss of control of limbs.

Twenty-fifth and twenty-sixth days. Memory poor, deaf, head confused, heavy, obtuse, lower extremities numb and clumsy. One reels in walking, soles feel cushioned; memory poor.

Twenty-seventh day. Voice weak and husky; legs and feet numb; head dizzy and mixed. Confused; eyes wild and staring; cushioned soles; sciatic pains; backs ache; hearing impaired; legs numb and clumsy.

Twenty-eighth and twenty-ninth days. All these symptoms aggravated.

Thirtieth day. Stopped experiments for prudence's sake.

Thirty-first to thirty-fourth days. Cured by feeding on broiled beefsteak, tea and coffee.

Besides these our author experimented similarly with bread, rice, wheaten grits, hominy, tapioca, sago, potatoes, green peas, string beans, green corn, beets, turnips, squash, asparagus, vinegar in excess and the various meats, on four to six men in groups, at times lasting seven to forty-five days. The results in all cases were recorded and tabulated as in the bean and oat-meal experiments. He says, page 207, lines 9-16: "To go through all my food experiments in detail would make this treatise far too voluminous to be read and studied, except as a work of reference. This would defeat my desire of getting it into the hands of as many students as possible in the opening of their career, directing their attention, as well as that of all earnest thinkers, whether in the profession or out of it, to the urgent necessity of dietetic reform, and to the real nature of most of our dis-

eases, based as they are upon departures from dietetic laws indicated by the organic structure of man."

Of the meats—eggs, fish, pork, veal, chickens, turkeys and game, after a limited time produced more or less distress about the stomach, much sickness and weakness, with great heat and bewilderment in the head. He calls this "meat dyspepsia."

He found that the vegetables, bread, rice, wheat-en grits, hominy, sago, tapioca and potatoes were fed singly for forty to forty-five days before neuroses were caused, and hence are most desirable for neurotics.

The crowning result of his auto-aliotic experiments was that beef was the only food that adults could live on continuously for years—that beef cured all other neurotic symptoms developed in the healthy persons experimented on, in a short time; simply adding hot water to wash out the alimentary canal and keep up normal peristalsis, and prevent the lodging and consequent fermentation of the food therein. Please remember these were *acute* cases without organic lesions, and hence easy to cure by stopping the cause. Had they been chronic cases they would not have got well so soon.

For simplicity, thoroughness, positiveness, extent and practicability, these food experiments are in my opinion unparalleled. They are so simple that any one can verify them, as said before, and their intimate relation to the treatment of neuroses, to name no more, entitles them to the careful consideration of all who are concerned in any way with the practice of medicine. The details can be had.

The Relation of Albumen, Starch and Gum to the Neuroses.—In the Transactions of this Association for 1857, Dr. Wm. A. Hammond contributed a prize essay: "Experimental Researches Relative to the Nutritive Value and Physiological Effects of Albumen, Starch and Gum when used singly and exclusively as Food." Though the author used only himself for experimentation, still his results are in place here. He lived ten days on albumen obtained from the serum of bullock's blood boiled well and washed with water.

Third day. "In the evening I had slight pains in the lower part of the abdomen and quite severe headache. Both disappeared after the first passage from the bowels. My sleep was unquiet in the early part of the night and I awoke with headache."

Fourth day. Severe headache with fever. Feeling of debility in the system. Singular sinking sensation at the epigastrium; nausea. Pains in lower part of abdomen very severe.

Fifth day. Was quite restless in the night and felt chilly towards morning.

Sixth day. Increase of debility; headache and abdominal pain not present. Hard work to eat the albumen.

Seventh day. Weaker.

Ninth day. Sleep very unquiet.

Tenth day. Debility extreme, intellect somewhat confused, sleep restless. Experiment ceased. All bad results removed by "proper diet."

Corn Starch. Neurotic Symptoms.—Fourth day. Good deal of debility, mind inactive, great indisposition to physical exertion. Oppression about lungs relieved by long breaths. Dreams of falling from precipices frequent; awoke several times with a sudden start. Saliva thick and ropy.

Fifth day. Mind dull and it required an effort to fix it on any subject. Chest oppression increased, sighing respiration frequent, slight palpitation of the heart, pain in abdomen, flatus. Awoke with a most intense pain over left eye. Free giving of magnesia relieved it instantly, showing acidity of stomach as the cause.

Sixth day. Debility; torpor of bowels. Mental phenomena unchanged, chest oppression somewhat less, palpitation very annoying.

Seventh day. Palpitation very troublesome, debility excessive, specially in dorsal muscles. Awoke with severe headache; slept ill.

Eighth day. Violent headache all day; numb, somewhat confused, almost constant twitching of left upper eyelid which was very annoying. Gripping pains in abdomen. Palpitation less violent and frequent.

Ninth day. Same as those of eighth day.

Tenth day. "The immediate effect of the slight abstraction of blood was to relieve the feeling of oppression at the chest, but in an hour it returned with increased violence. The debility was very great." Experiment ended. "Ordinary diet renewed with some degree of caution. After a few days I became free from all unpleasant symptoms and rapidly regained my usual good health."

Diet of Gum Arabic and Water Alone.—Experiments could not be continued over four days on account of the derangement of health.

First day. "I had severe colicky pains in the lower part of abdomen after eating the second meal of gum."

Second day. Good deal of debility, hunger and weakness soon after meals. Abdominal pains more severe after eating. Unpleasant dreams, disturbed sleep, severe headache on awaking.

Third day. Extreme debility and hunger; headache; obliged to lie down during afternoon; abdominal pains annoying. Restless at night, little sleep, awoke unrefreshed.

Fourth day. Hunger and debility great, severe abdominal pains for nearly twenty-four hours, tenderness of abdomen on pressure. Hunger not relieved by eating gum. All study omitted; physical exertion trifling; did not sleep well. Stopped experiment, unable to longer refrain from other food.

Fifth day. Great weight and pain in rectum. The writer says: "As an article of food for

the sick, gum arabic should be especially condemned." His closing paragraph is as follows: "In an essay of this character, whose chief aim is to add to the sum of knowledge, the labors of others could at most receive but a slight notice, and must of necessity frequently be passed over without even a word of recognition, yet no one appreciates more highly than myself the self-devotion and constant striving to enlarge the bounds of science which animate so many physiologists of the present day, and which have already yielded such brilliant results. Had I, however, attempted to do justice to even a tithe of their contributions, I should have converted this memoir into a treatise, and might have lost sight of all originality in my efforts to make successful compilation. With what success I have prosecuted these inquiries is not for me to determine. I cannot, however, think them valueless, for, if they only excite others throughout our land to investigate in living beings the operations of nature, they will still be beneficial to the cause of that science which constitutes the basis of all medical knowledge. From the united labors of those who seek by original investigation to build up a positive science, where there is yet so much darkness and uncertainty, what may we expect? May we not confidently look forward to the perfect enlightenment of our minds in regard to the most obscure of the vital processes? Though we may often be led astray by experiments conducted without due care, and with insufficient knowledge, they yet afford the only means by which we can successfully work out the sublime problems which the great Creator of all has prepared for our solution."

These researches accord with the practical idea that colic, headache, confused intellect, laziness, bad dreams, epilepsy, convulsions sometimes and other neuroses are connected with improper feeding, and cease when this cause is removed. Children have died from eating raisins, which proved too much of a digestive problem for the nervous system to solve, overwhelming it by its difficulties. But we wish to go a step further, and assert that affections of the nervous system depending on fatty degeneration and fibroid development have their primal cause in food, as pointed out by Salisbury (*loco citato*). Among them we name paralysis, partial or complete, hemiplegia, paraplegia, apoplexy, sclerosis, hyperæsthesia, anæsthesia, etc. Here there is structural change of the arteries or nerve sheaths, where normal tissues, as the muscular arterial coats, are replaced by fat or fatty deposits and a thickening of the fibrous tissues of the nerve sheath, to name no more. The arteries are weakened, yield to blood pressure and rupture, blood is poured out, pressing on the immediate neighboring structures and causing the paraplegia or hemiplegia, or instant death, according to where the pressure comes.

The thickening of fibrous sheaths of nerves comes from a low vitality produced by food which does not have pabulum enough to make good tissue, or from fermentation producing the paralyzing gases of carbonic acid or sulphuretted hydrogen, etc. If one doubts he has only to inhale continuously either of the gases, cautiously, for death might ensue.

The effect of this paralyzing is to produce fatty degeneration by disuse—though it should be added that "fatty degeneration affords time for repentance and reform," and is a preservative process, as, without it, destruction would come sooner. All diseases of fatty degeneration besides those named—as Bright's disease of the kidneys, fatty liver, heart, lungs, etc., are intimately connected together as neuroses caused by paralyzing foods. This rather clashes with conventional terminology; but curing disease is more than terminology. As knowledge grows, nomenclatures are changed to accommodate the increase.

Sclerosis comes in the same category with goitre, ovarian and fibroid growths, outcomes of the growths of half-dead and semi-paralyzed tissues which are starved and numbed on improper alimentation. The cure lies in the food. The main element is having it well digested. Any food that is well digested by any person in health is a good food for that person, but any food that ferments into alcohol, carbonic acid gas, vinegar, sulphuretted hydrogen, etc., is not a good food for that individual. So, in affections of the nervous system, the main thing is to stop the causative foods and substitute those that will digest, and not paralyze the nerves (the glandular structures specially), and will furnish elements for new and healthy structures. Nature then cures. Medicines, baths, massage, etc., are the adjuvants and assistants to the *vis medicatrix nature* which runs the system and takes considerable time to repair the ill results of bad feeding which has been going on for many years.

Experiments with 1,028 hogs fed on sour distillery slop. (See "The Relation of Alimentation to Disease," *loco citato*.)

General Remarks.—In all the hogs experimented with, paralytic symptoms began soon after bloating and constipation till past the eighth week, when one-fourth were dead. By that time the others begin to eliminate the vinegar faster than it comes in.

Neurotic Symptoms: Gradual weakening of the limbs, labored breathing on moderate exertion; tendencies to stagger and reel. Often dragging hind legs and singing in the ears, shown by a frequent shaking of the head and lopping ears held the lower.

In 254 fatal cases, loss of control of all the hind parts so that they were often unable to walk or even stand without support.

1858, October 4, 624 hogs, healthy, fed on slop:

Thirteenth to Nineteenth days. Dizziness, ringing in ears, slight reeling in hind legs—in all.

Twentieth day. One hog refused to eat; was partially paralyzed, reeling in walking, nose to the floor, head held to one side and shaking it frequently. Indifferent. Partially deaf and blind. At 10 A.M. it fell over on its side. Surface became blue. Breathing short and labored. Died at 12 M.

October 22. Four hogs died to-day. Became cyanotic and very much oppressed for breath and paralyzed before death.

Case I.—Twelve hours before death ceased to eat, became listless, dumpish, and insensible to surrounding objects. Eyes dull, heavy and glassy. Staggered about. Soon the surface became blue, the hind parts paralyzed, and the animal unable to longer walk, fell over and died.

Case V.—Partially paralyzed at 8 A.M., Nov. 3. Died at 11 A.M. Meningeal vessels and sinuses gorged with blood but not connected with the paresis.

Case VI.—Died at 12 M., Nov. 3. Staggered as it walked for several hours before death. Reeling behind. Meningeal vessels and sinuses gorged with blood.

Case VIII.—Died Nov. 4, 8 A.M. Sluggish yesterday afternoon with nose to the floor. Reeling. Appeared blind and deaf. Brain congested highly. Meninges gorged with blood.

In one month 56 hogs died on slop feeding.

Case X.—Nov. 2, refused food, became listless, gradually more and more paralyzed, blind and deaf. Fell over and died suddenly at 1 P.M., Nov. 1. Brain and meninges congested with slight exudation of serum.

Case XI.—Nov. 3, P.M. Ceased to eat. Nose held to floor. Reeled in walking. Held head to one side with one ear lopped, often shaking the head. 12 M. fell over, and died at 3 P.M.

Case XVII.—Nov. 5, A.M. Early ceased to eat, became dumpish; nose to floor; reeled in walking; head held to one side; left ear lopped; shakes head frequently. 4 P.M., fell over on one side and began to twitch spasmodically with general tremor before death. Meningeal vessels gorged with clotted blood; embolism.

Case XXV.—Nov. 7, 10 A.M. Nose held to the floor; partially blind and deaf; reels in walking. 3 P.M. Unable to get up; lying on side. Brain and meninges congested with small quantity of serum.

Case XXVI.—Nov. 7, P.M. Unable to stand. Died in the night. Brain and membranes congested.

November 28, 154 hogs had died out of 624.

1858, October 25. Another lot of 404, making 1,028 in all, put on sour whisky slop from distillery:

Nov. 9-13. More or less dizzy; reeling in the walk sometimes and less ravenous for food. Four

hogs so injured by fighting that they were slaughtered, leaving 400.

Case LIX.—Died suddenly by feed trough. Brain gorged with clotted blood, blood-vessels broken.

Case LX.—Nov. 19. Nose held to floor; reeled in walking for thirty-six hours. Partially deaf; blind and paralyzed in hind parts. Brain congested with bloody serum effused.

Case LXIX.—November 24. Paralyzed and unable to stand fourteen hours before death. Brain congested, and cranial cavity contained about one ounce of suffused serum.

Out of the 104 cases of autopsies, 72 had embolism of brain and 16 ruptured blood-vessels in brain.

The author ascribes the paralysis in all cases more or less severe to the absorption of carbonic acid gas with which the stomach and bowels were filled. (Koting, p. 290, paragraph 111, etc.) "The injurious effects of the acetic acid are increased by the gradual absorption of carbonic acid gas, with which the stomach and bowels are constantly filled. This gas slowly paralyzes the muscles, follicles and glands of the whole digestive apparatus, so that these surfaces, villi and follicles cease to have the selective power of health, through which to carry on the various normal physiological processes: deleterious products then effect an entrance together with the nutrition. This state being ushered in, diaphragm, heart, lungs, the whole organism in fact, begin to get more and more enervated. The action of the heart weakens, the extremities are colder, the breathing is more hurried and labored, the nerves of sense are more or less paralyzed; all of which aggravates the effects of the acetic acid by partially paralyzing the entire system and preventing such a rapid elimination of the acetic acid as might otherwise take place."

This is undoubtedly true. Embolism of the brain structures certainly affects the nervous system. It should be added that like cases of hogs were cured by feeding on sweet corn.

With this evidence this paper is closed showing how I have been set right. I can hardly express my delight which comes from the acquisition of this knowledge and the debt owed to the source of information. Doubters can easily verify the statements by living for sixteen days on baked beans alone. So long as there is no rebutting evidence these statements should stand accepted as the exponents of a higher and more practical plane of medical science than has yet been attained. The "capacity it gives to do good not only gives it a title to it but makes the doing of it a duty" (Duke of Brandenburg, 1691).

1730 Broadway, May 1, 1888.

DR. E. VON ERMENGEM has been appointed Professor of Hygiene and Bacteriology at Ghent.

INFANT FEEDING.

Read in the Section on Diseases of Children, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY CHAS. WARRINGTON EARLE, M.D.,

PROFESSOR DISEASES OF CHILDREN, WOMAN'S MEDICAL COLLEGE,
PROFESSOR OBSTETRICS, COLLEGE PHYSICIANS AND SURGEONS,
CHICAGO.

As an introduction to what I have to say in regard to infant feeding it will be particularly appropriate to present to you a brief *résumé* of what Baginsky, the latest German author on "Kinderkrankheiten" writes on the subject.

It is appropriate, it appears to me, for several reasons: First, it gives to you the ideas of a leading advanced man on the subject, which is more than would come to you, perhaps, did I not quote from him. It presents to you, secondly, his conclusion in regard to the terrible mortality where a parent deprives her child of maternal nourishment, and also shows how much greater has been the effort with us to furnish a substitute for mothers' milk. Possibly this is to our discredit.

The greatest of mortalities in all times and among all nations is due to the lack of mothers' milk. In Berlin, one-half of all the children born out of wedlock die within six months, and during the summer months a very great number of all children succumb to errors of diet.

The question *par excellence*, rising above all others, is infant diet.

Next to mothers' milk comes the wet nurse.

Artificial foods are divided into two classes:

In the first group are enumerated,

Cows' milk,
Peptonized milk,
Condensed milk,
Cream mixtures,
Liebig's foods.

While in group two are found the prepared foods.

The first class of artificial foods is substituted from the birth of the infant, while the second is particularly adapted to somewhat older children and may be given as adjuvants to mothers' or nurses' milk.

The difference between mothers' milk and cows' milk is given in general terms as follows: the water is about equal, caseine, albumen, salts and butter, a greater quantity in cows' milk, and of sugar less.

This analysis as regards the fats does not agree with the usual analyses. He also says that coagulation and fermentation arises sooner in cows' milk than in mothers'. According to Dogiel there is not as much difference between mothers' and cows' milk as has been formerly supposed. Out of cows' milk it is possible to manufacture a substitute which in almost every essential is equivalent to mothers' milk. The greatest difficulty is to obtain good cows' milk, and this is why condensed milk is frequently the best substitute which

can be provided. Cows' milk if given to babies should not be administered raw, but boiled long and thoroughly in order to destroy bacteria. Germs of tuberculosis can be effectually destroyed if they exist in cows' milk, by thorough boiling. Soxhlet's cooking apparatus is spoken of as the best and safest to destroy the germs found in milk. By the use of this process cows' milk is much better as a child's food than we have formerly thought. On account of the protean substances, however, the milk should be diluted, and there should also be added a little milk sugar. The digestive powers in children are different. Some bear one thing well and another child something else better. One takes a great amount of fat and thrives, others demand less and if the same amount of fat is given, disease ensues. Cows' milk should usually be prepared in proportion of one to three for young children, later in equal parts. Some children at 9 months can take clear milk and digest it perfectly. A curious fact is developed in the dilution of cows' milk, in that from at first being one to three, this proportion is lessened about 15 per cent. during the first two months, and then increased until equal parts of water and cows' milk are used. Two methods of preserving milk are presented. First it is condensed with sugar, and the second without this ingredient. The great trouble in the condensing process is, that too much sugar makes it indigestible and if you take a milk of this kind and dilute it so that it can be digested it makes it too weak. Every can of condensed milk should be separately inspected.

Peptonizing food is not a new idea. It is very old and great difficulties have been found in bringing about the process, and it is not regarded with great favor by the authority from whom I am now quoting. Biedert's cream mixture contains no more than a single per cent. of caseine, and agrees excellently well in a large number of cases. Liebig's foods and soups are made from milk, wheat and malt, but it is believed that the cream mixture mentioned above, when fresh and properly made, is better than Liebig's food. Nestlé's food is spoken of as being the best type of a prepared food. It contains 40 per cent. of sugar, 5 of fat, 15 of protean compounds, and 30 per cent. of dextrine and amylum. It has been noticed that a long continuation of the administration of an artificial food, in some cases at least, brings about a change of blood. The red corpuscles diminish, but they can be increased if a wet nurse or mothers' milk is substituted.

This much for an introduction, and a statement of what is so greatly desired—a substitute for mothers' milk.

Some one of the old authors, whose name I cannot now give, has said that "Nature does not afford, nor can art supply a substitute for mothers' milk." With this I agree in every respect, and believe further, that as medical men our influence

and encouragement should always be given to mothers, unless some contra-indication exists, to nurse their babies.

We should also explain the dangers which children must pass through, particularly during the summer, and state plainly the probabilities that a certain number of them cannot survive upon any artificial food which may be devised or suggested. Practically, however, we know that in many cases our instructions cannot be carried into effect; that either from sickness, or previous hereditary disease, or from the death of the mother, a considerable number of babies must be, and are deprived of their natural alimentation. In addition to the above cogent reasons, we find a certain number of mothers who are robust and healthy and should nurse their own children, but are constantly finding excuses for not doing it; and either without the physician's consent or for some trivial reason, refuse to nurse their children, and force the issue of an artificial diet.

So firm is my belief that no artificial food can be selected which will furnish a proper nutriment through the hot months to a considerable number of these little people whose mothers cannot or will not nurse them, that I am every year coming to suggest with greater frequency a wet-nurse. I know full well what a wet-nurse in many families means. Many of them are conscientious, and do everything possible to nourish the little charges placed in their care, while others are totally irresponsible and corrupt in the extreme. If from any cause the mother cannot nurse her baby, and from certain other causes a wet-nurse cannot be provided, then, of course, either an entire or partial artificial diet must be provided. A *mixed* diet is preferable to an artificial one, that is, part mothers' or nurses' milk, with the remainder supplied from some outside source. A little mothers' milk for a sick day or while a tooth is erupting is most valuable.

At the first, then, we must acknowledge three facts.

1st. That mothers' milk is the food *par excellence* for a baby.

2d. If this cannot be furnished, in large cities at least, a wet-nurse should be procured.

3. If, for causes which I have now enumerated, the mother cannot supply the nourishment, and if from causes over which we have no control, a wet-nurse cannot be secured, an artificial diet must be furnished. And that if the mother or a wet-nurse can provide only part enough nourishment for the child, it is better to fill in with some of the substitutes, such as cream, cows' milk, or some of the prepared foods, than to try to bring up the child upon a strictly artificial food.

One of the first occasions at which we may be called to supply an artificial food for a baby comes in a case where a child is prematurely born. In part of these cases the milk secretion of the mother

is at once established and the child is nourished from the very commencement with the food which its little non-developed digestive apparatus can best provide for; in others several weeks may elapse before the milk secretion is established, and during that time something must be provided for its nourishment. Several have already come under my care. I have notes at this moment of three infants born between the six and seventh months, where an artificial food from necessity, had to be provided. I have succeeded in saving these lives on an artificial food. Cream is the basis, barley-water the menstruum, to which is added a little salt, a little sugar of milk, and a small amount of lime-water.

A prematurely born baby should be fed a small quantity frequently. Sometimes not more than a half-teaspoonful, and when not fed from the spoon let an ordinary ounce bottle be provided with a rubber mouth-piece. I have no use for the large nursing bottle provided with glass and rubber tubings and brushes. I regard them, with all their appliances, particularly for a prematurely born child, a fraud and a snare. For the first few days, perhaps, cracker-water with a small amount of sugar of milk is all that is necessary. Then cream added to a little cracker-water, or cream and rice-water; then cream and barley-water, and if vomiting takes place, a small amount of lime-water should be added. If from any reason the cream does not agree with the baby, condensed milk with barley-water, a little salt, and possibly the addition of a little lime-water. By varying the amount of cream, using either barley-water or rice-water as the diluent, adding a little sugar of milk and a little grain of salt, and sometimes a little condensed milk, when from any cause the cream disagrees with the infant, one is able to carry along one of these puny children until such time as the milk secretion is established. At another place in this paper I shall have something more to say in regard to condensed milk.

OBJECTIONS TO CREAM FOODS.

In our large cities it is difficult to obtain pure cream, and it is more liable to changes than ordinary cows' milk. It is also possible that enough cream to nourish a child would be too fat for it to digest. As a matter of fact, however, we find cream does agree excellently well with a large number of children.

ARTIFICIAL FOODS.

Coming to consider the use of artificial foods, we should state in unmistakable terms to mothers that because one baby has been brought up on a given artificial food, it does not follow that the same food will agree with the next baby. One food nourishes a given baby well, but may, if administered persistently, kill the next baby.

The peculiarities, good and bad, of the different foods which I shall consider will be purely

from a clinical standpoint. The discussions regarding the chemical compositions and arrangements must come from the chemists themselves.

My trouble has been to find a food that would in the first place, agree with a baby, and secondly, that would nourish it.

Cows' milk will agree with some babies, but in many cases its administration is followed by vomiting and passing great masses of curds (caseine). Manufactured foods are frequently retained by the child, but he emaciates and many die from inanition.

Very early in my experience I began to detect a difference in foods. Some agreed with a young baby and would not nourish an older child; while other foods disagreed with a young infant, and furnished abundant nutriment to a child 10 or 12 months of age. Without investigating in a scientific manner the composition of these foods, I came to calling them young foods and old foods. Among the foods which I have found suitable for very young children, I would mention cream and barley first, cream and oatmeal water or rice water, condensed milk, with some restrictions, Nestlé's and Carnrick's foods and Malted Milk. I should not fail to speak of the white of egg as a substance very easily digested by children with weak stomachs, and which gives to them a very fair degree of nourishment. Then comes Mellin's food, Imperial Granum, and Ridges' food for older children. I speak of these foods after considerable study and rather extended experience with them, and do not place any as first, or in any degree a perfect food.

Let us examine the constituents of these foods, and point out their imperfections. It will be noticed that simply from experience I had at first selected a food with more fat—that is, cream and barley-water. Next came milk and Malted foods, and then for older children the farinaceous and Liebig's foods, Mellin's, Ridge's and Imperial Granum. It appears to me that there is good in all these foods, but the medical profession do not take sufficient pains to designate a food suitable for a young or older child. The matter is left too largely to the people, until a food of their selection has produced its deleterious effects, and then we are called, only to find a child emaciated, impoverished and with a digestive apparatus so thoroughly out of repair that the child dies before we can bring about a normal condition of digestion.

We must cease believing and acting on the belief that, because a baby is a little man that he needs the same food (as regards quality, and only less in quantity) that a man needs. And the dear people who are so quick to decide some of these questions which trouble us for years, should have alongside the motto "God Bless our Home," another—"Don't Starve the Baby."

COWS' MILK.

This is a perfect food for the adult. It has fat,

albumen, carbo-hydrates, and salts, and the adult stomach generally digests it with ease, and it is capable of sustaining life for a long period.

It forms, however, very heavy, and dense curds, and in this respect is frequently extremely difficult to digest in a weak and undeveloped stomach.

It is also poor in fat, and with the objection urged above, namely: the tendency to form a hard, firm curd, in many cases comes to be, when used as a baby food, the exciting cause of many diseases, and remotely the food upon which emaciation, marasmus, and death ensue.

I do not know that our brethren in the country and small towns find these difficulties with the administration of cow's milk, but we do in the large cities. I do not deny that some children thrive on cow's milk; I grant this, but at the same time I do know that it kills others.

The milk from blooded cows supposed to be richer in fat has been tried, and in many cases works well, but in others has been a marked failure.

There is no reason why, however, when we know what the food the cow is fed upon, that she is in a clean stable, and care is taken with the milk and it agrees with the baby, that it should not be selected.

The index of good nutrition, whether the baby is on mother's milk, mixed food or artificial, is in its growth. To this end the child should be frequently weighed, and we should inspect its appearance, look at its fontanels, etc.

THE SO-CALLED MILK FOODS.

The best examples of so-called milk foods are Gerber's and Nestlé's. The first I have had very little experience with, but know that it has agreed excellently well with a few children.

Nestlé's food is made very much like it, and is with us a very popular food. Some Chicago druggists say that more Nestlé's food is sold than any other infant food on the market.

Condensed milk forms the basis of Nestlé's food. To this is added a certain amount of wheat flour and as stated by some, oatmeal. This substance is then made into biscuits, thoroughly cooked, ground minutely and mixed with the condensed milk. This is then dried by slow heat, ground, and sufficient wheat gluten is added to bring up the albuminoids to the same per cent. found in human milk. (Leeds.)

Whether this is the exact method of making this food we do not know, but we do know that all of these milk foods have a good per cent. of albuminoids, fats and salts, and that by baking, some of the starchy parts are converted into dextrine and are easily assimilated.

OBJECTIONS TO NESTLÉ'S FOOD.

It is claimed that a large part of the starch is not converted, and in none of these foods has the caseine of the milk been pre-digested, and the

character of the caseine is not at all changed. Notwithstanding this fact, we know that at the bedside Nestlé's food agrees with a very large number of children.

CONDENSED MILK.

I may remark in the beginning that the great trouble in the use of condensed milk is, that not enough is used. Every one should understand that milk is only condensed four times, and that a small amount will color a very large amount of water. The people do not understand this, and I am afraid that physicians do not take the trouble in many cases to investigate it. One teaspoonful of condensed milk will color twelve ounces of water, and I have known this to be given as a food to an infant. It is a starvation diet, and in the majority of cases sooner or later the child develops symptoms of bad nutrition.

In my experience the youngest infant will take condensed milk in the proportion of 1 to 10 or 15, that is, barley or rice water, 10 to 15 pts., condensed milk, 1 part, sugar of milk, salt and the phosphates. Even this will only be sufficient for a short time, and one must soon either add more condensed milk, or to the same food, cream. The agreement with each individual case, in less or increasing quantities, is the only safe rule for our guidance.

Objections have been made to condensed milk, and in all probability some of them are valid. We have already remarked that this food does not in all cases agree with infants.

It has been claimed that the character of the caseine is unchanged. It is possible that the diluent, barley or rice water, may correct this to some extent. Certain it is that condensed milk with the above diluent agrees well with some children.

It has also been claimed that the large amount of cane sugar or glucose used in the preparation of condensed milk, make it more susceptible to fermentation. I am not aware that this objection has been removed, unless it is in a condensed milk made without sugar.

After the milk foods, come, it appears to me, the so-called Liebig's preparations. Some of these are used with cows' milk, and by this addition it is claimed that we obtain very nearly a preparation corresponding physiologically with mother's milk.

It is claimed for Mellin's food:

That it is a soluble dry extract from wheat and malt.

That it is perfectly free from starch and cane sugar; the starch being converted into dextrine and grape sugar.

That it is entirely free from husks, indigestible inert matter and animal germs.

That it contains a large amount of proteids (albuminoids) and soluble phosphates and that it is alkaline in reaction.

It is not claimed that this food has sufficient fat to nourish a child and to supply this, cream may be added. It is claimed, however, that by its addition the albuminoids are so changed that small flakey curds are formed in place of hard, dense ones.

This food certainly has stood the test, and at the bedside has been found of great value in the practice of those who are studying this subject and whose opinions are worthy of respect.

OBJECTIONS TO LIEBIG'S FOOD.

These are composed largely of barley, malt and wheat flour, and starch, which has been converted into *maltose*. These foods will not nourish a child sufficient without the addition of cow's milk, and as their constituents (Mellin's and Horlick's food) are nearly the same in nutritious value as cow's milk, it is urged that they do not add anything to cow's milk, except sugar and an alkali. It is claimed that the addition of the maltose does not prevent the formation of hard coagula from the caseine of cow's milk. From experiments which I have recently made—and my thanks are due to Prof. Salisbury of the Woman's Medical College, for assistance—it seems that the claim which is made by the advocates of the Mellin food is true, and that the addition of this food to cow's milk does cause it to break up in very small flakey curds. The fact that these foods contain a considerable amount of maltose, and are sometimes laxative to babies, possibly is true, but this may be said of most any other food.

MALTED MILK.

This is a new food, but from personal observation I can testify to the fact that it is of value in some cases. It has agreed with several very young children when other foods would not. The principle involved is that the diastatic action of malt is most closely allied to the active principle of saliva—the pancreatic and intestinal juices. It is made as follows: "In malted milk we present pure fresh cow's milk, combined with the extract of selected wheat and malted barley in a dry-powdered form, perfectly soluble in water, requiring no cooking, or the addition of milk, and free from starch. Situated as we are, in the midst of one of the best dairy districts, our milk is obtained from cows under our own supervision, and is evaporated before any change is possible. In addition to this, we select all our own grain, malt all our own barley by special process, by which we obtain the greatest diastatic action from the malt; we also do all our own grinding. Consequently we can guarantee all the ingredients, pure, fresh and unadulterated."

This food requires no cooking, neither the addition of milk, and is said to contain no starch.

OBJECTIONS TO MALTED MILK.

This comes from the fact that it contains a

large amount of maltose, and is liable to abnormal fermentation, the same as we find in Liebig's food.

PEPTOGENIC MILK POWDER.

This is claimed to be the safest and best physiological imitation of mother's milk, and is composed of milk sugar—the mineral matters and pancreatin. It is a substance to be added to cow's milk in order to make it possible for a child to digest the milk.

OBJECTIONS TO PEPTOGENIC MILK POWDER OR HUMANIZED MILK.

Theoretically, this milk should be very nearly the correct food; but, practically, we find that it disagrees with a considerable number of babies. The greatest objections are that it is not practicable in the household, because it requires scientific skill to properly pre-digest the food, and that many irregularities of digestion will certainly come about from this preparation. Recent writers have claimed that pancreatin is extremely liable to putrefactive changes, and that if it is used, it must be fresh and sterilized by heat. Foster says that "pancreatin, unless absolutely pure, swarms with bacteria." The theory of this food is good; practically it does not come up to the standard. It has been suggested that if this food is not rich enough to nourish a baby, cream may be added at each feeding.

CARRICK'S FOOD.

I have carefully examined the process of the manufacturing of this food and believe that the greatest care is exercised in gathering the milk and the attempt is made to insure absolute purity. The dairies from which this milk comes are under strict regulations, and as soon as the milk is received it is drawn into digesting tanks and brought to a temperature of 115 to 120° and treated with freshly made extract of pig's pancreas. It is afterwards raised to a temperature of 210° to entirely destroy any pancreatic ferments; evaporated to the consistency of condensed milk, combined with dextrine and milk sugar; then evaporation continued and powdered and bolted.

This food is composed of 45 per cent of powdered milk, 45 per cent of dextrine and 10 per cent of milk sugar. It is partly pre-digested, so that the caseine is as readily digested by an infant as it is in human milk. Dextrine is used in place of maltose for the following reasons: Dextrine is not fermentable until changed into sugar. The youngest infant can supply sufficient ferment to digest dextrine, and when the process of digestion is under way, abnormal fermentation is not liable to occur. The milk is only partly pre-digested, because it is not advisable to entirely digest any food before ingestion. It has been claimed by Prof. Vaughn that preserved dry milk, if properly done, will keep for any length of time; and it is

claimed that of the many hundred thousand cans of this food, which have been placed upon the market during the past three years, not more than a dozen of them have been returned in bad order. Finally, it is claimed of Carrick's food that it is the only artificial food which will thoroughly nourish a child without the addition of cow's milk; that it approaches nearer human milk in composition and digestibility than any other artificial food, up to this time, that has been placed upon the market. It is also claimed that it will agree with a larger number of children than any other artificial food.

Personally, the food has agreed with children in my practice, and has certainly "bridged over" some who have not been able to take any other food. In my experience it is hardly rich enough, however, and fat in the shape of cream must be added.

GRANUM AND RIDGE'S FOODS.

It has been generally conceded that starch can not be digested by young infants from the fact that their digestive fluids are lacking in certain constituents. Upon this basis certain foods which are known to contain starch have been objected to. Theoretically, it is probably true that babies—at least a large number of them—cannot digest starch, yet, practically, we know that some babies do take care of this kind of food excellently well. According to rule a baby or young child should not eat potatoes; this kind of food should disagree with them. As a matter of fact, we do know, however, that some children thrive excellently well upon this kind of food.

Imperial Granum and Ridge's food have been placed in this class, or as Farinaceous foods. They have been tried and tested for a long period and it must be confessed that for older children they do well in many cases. Time will not permit me to enter into the details of manufacture. They are made largely from the best of flour, made very fine, and thoroughly cooked by which a large part of the starch is changed into dextrine.

In the Foundlings' Home in Chicago, for very young and undeveloped babies cream foods take the preference; then comes Nestlé's food, and afterwards for older children, Granum. Ridge's food is a favorite; but the peptogenic milk foods have fallen below the standard.

Probably one of the most important questions which should engage our attention is the

FERMENTATION OF MILK.

Fermentation of milk occurs only in consequence of the introduction into it of micro-organisms. If the milk be received by a sterilized tube into a sterilized receptacle directly from the udder of the cow, it will not ferment nor become acid, though kept indefinitely. But except these precautions are taken, the germs always gain access to it, consequently in order to prevent its

fermentation, it is necessary to heat it. It can be sterilized by heating to 70 degrees for an hour by which process the adult bacilli are killed, but in order to kill the spores it is necessary to repeat the process for an hour each day for four or five days. Heating to 100 degrees by a current of steam for one hour will sterilize it completely, but boiling coagulates the albumen and to some extent changes the milk sugar. The first process in the fermentation of milk is due to the action of a bacillus, and consists in the conversion of the milk sugar into lactic acid. This process ceases after a small quantity of acid is formed, but if the acid be neutralized by chalk, the fermentation will go on until the milk sugar is all decomposed. By the change of reaction of the milk the caseine is coagulated. This coagulation is said to be due to the action of the acid and not directly to that of the bacillus. When the milk sugar is converted into lactic acid, another bacillus—*bacillus subtilis*—attacks the lactic acid and converts it into butyric acid with evolution of carbon dioxide and free hydrogen. This bacillus cannot act on milk sugar unless it is first converted into lactic acid.

Under exceptional circumstances there is formed in milk a substance first discovered by Prof. Vaughn, of Ann Arbor, and named by him "tyrotoxicon" (cheese poison). This substance is a crystalline nitrogenous substance, and is supposed to be a ptomaine. When taken it produces pain at the base of the brain, vomiting or retching and purging. When given to an animal similar symptoms are produced. Prof. Vaughn believes this to be the cause of cholera infantum. Tyrotoxicon is formed spontaneously in milk after some months; and it will be produced very quickly if some milk in which it has been formed be added to fresh milk. Its formation seems to be connected with the butyric acid fermentation.

In conclusion I have to repeat my quotation made at the opening: "Nature does not afford, nor can art supply a substitute for mother's milk."

1. Mothers should be encouraged by every argument possible to nurse their children, and the dangers of too early weaning for trivial causes should be demonstrated to them.

2. If from causes which we can not control and which seem rational and valid, a mother can not nurse her child then, in cities at least, a wet-nurse should be procured.

3. A mixed diet is preferable to an artificial one.

4. For very young infants in lieu of mother's or nurse's milk, cream with barley, rice or oatmeal water, to which milk sugar and either common salt, phosphate of lime or lime water in small quantities, is added, seem to agree best.

5. For older children cows' milk and the so-called milk foods, and it would seem from some recent analyses of cows' milk, that if all kinds of fermentation can be prevented that the task of prepar-

ing cows' milk so that it will agree with infants, will not be as difficult as it has formerly been. It also seems that it is along this line that investigation should in future be made. We must not only insist that good milk shall be provided, but also that it shall not have in it bacteria. If milk is used let it be thoroughly boiled, and for a long time; if it is diluted with water, let it be absolutely pure; if the attempt is made to make it more nutritious by the addition of cream, let it be that which has not already undergone partial decomposition. The sugar added should be pure milk sugar, and if a small amount of wheat or flour is used, this too should be thoroughly cooked.

6. If artificial foods are used, let the clinical test decide which shall be selected, and when one food is found to agree with a child, let the growth and increasing nutrition of that child, or its loss in weight and commencing atrophy, be the guide for the substitution of some other food. I cannot designate particular foods for reasons perfectly obvious. Every food has its advocates; every food has its chemical analysis which prove, without any shadow of doubt, that it is chemically and physiologically the only substitute for mother's milk, and yet every one of them, sometimes fail us, I will admit that this is true of mother's milk in rare cases. But, as a rule, let our advice be in the order I here name—mother's milk, pure milk, cream foods, milk foods, malted foods, farinaceous foods; always pure, free from bacteria and each preparation, whatever it be, frequently inspected.

CEREBRO-SPINAL MENINGITIS.

RECOGNIZING INCIPIENT CONGESTION AS BASIS OF TREATMENT.

Read in the Section on Practical Medicine at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY J. McFADDEN GASTON, M.D.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY, SOUTHERN MEDICAL COLLEGE, ATLANTA, GA.

The disorder known as cerebro-spinal meningitis presents various phases in different cases. If all the symptoms observed in the many forms of this affection were collected, they would afford a most extraordinary nosological group. Phenomena that ordinarily accompany other diseases are often associated with this Protean malady; and yet there is no single development of its characteristics which is essential to its recognition. Even the opisthotonos, which may be regarded as pathognomonic when present, is sometimes absent in cases in which the progress of other developments leaves no doubt about the true diagnosis.

The multifarious elements that enter into the history of this disease are well calculated to deceive the practitioner in an isolated case, but it

most frequently occurs in an epidemic form or in groups, so as to throw light upon the diagnosis in cases not presenting distinctive features. It also undergoes very striking modifications in its different stages of development in the same individual. The primary congestive feature is variable in its degree and duration, inducing general vital depression to a greater or less extent, followed by reaction with febrile indications. This leads to, or is accompanied by, inflammation in the coats of the brain and spinal cord, and the consequent effusion of serum or the production of pus. The accumulation of these fluids in the arachnoid cavity and in the ventricles of the brain, induces frequently impairment of vision, especially, according to my own observation, in the left eye, and deafness with subsequent indications of paralysis, either paraplegia or hemiplegia. I have had occasion to note recently the occurrence of complete loss of motion and sensibility in the arm and leg on the right side, after the left eye had become affected, in a case which was diagnosed previously as cerebro-spinal meningitis, and which terminated fatally in a few hours afterwards.

The appearance of ecchymosed spots, especially on the legs, would indicate a breaking down of the blood crasis as the disease progresses; and yet the observations made upon the blood in the early stage show an increase of fibrin, and there is a buffy coat upon the surface, with coagulation of the blood, when discharged into a vessel by venesection as in former days.

In the progress of this disorder, pains in the extremities, with swelling of the joints, sometimes become troublesome attendants; and by some peripheral association with the great nerve centres it is found, that a certain transition occurs, leading to collapse.

This general and superficial outline of the developments, gives only a very meagre presentation of the various phenomena observed in cases of cerebro-spinal meningitis. I refer to these data, from my professional experience, to impress upon my colleagues the gravity of the progressive stage of this disorder, and the great importance of an early recognition of the true character of the case, with an immediate application of measures calculated to arrest its tendency to a fatal result.

The fundamental element in serious cases, at the outset, is evidently an overpowering impression upon the nerve centres; and those who have watched closely the concomitants of the early stage must have remarked a striking correspondence between the main features of this disease and those found in pernicious fevers or in those cases known as congestive chills. The heat of head, coolness of extremities, heavy respiration, and general discomfort, are common to them.

The participation of the ganglionic system with the cerebro-spinal system of nerves is shown, by

the marked vital depression; and there is evidently a lack of nerve power to maintain the normal performance of the various functions of the body, inducing congestion of all the internal organs. It has been demonstrated, by experiments on the inferior animals, that the division of nerves which supply a part and the deprivation of the nerve force, leads to congestion of the vascular structure; so that we are prepared to comprehend how enervation becomes the precursor and concomitant, if not the direct cause of congestion.

While we know very little of the real nature of the atmospheric or climatic influence which operates at certain seasons in particular localities, as the remote cause of cerebro-spinal meningitis, there is something in the sudden changes of the weather, which strongly predisposes the organism to vital depression, and hence to congestion of the viscera. As a consequence of this engorgement, there is doubtless an atonic state of all the internal organs, which becomes manifest earlier or later by marked prostration, and eventually leads to collapse, which is rarely, if ever, relieved by any kind of treatment, so as to arrest a fatal result.

If a patient passes through this congestive stage of the disease, the reaction is attended with inflammatory developments, and the membranes of the brain and cord are involved, so as to warrant the designation of cerebro-spinal meningitis; prior to this, however, the injurious impression of the congestion and vascular engorgement may have reached a point which does not admit of a high grade of inflammation of an acute character, but the symptoms indicate an atonic condition, with a low form of fever and subacute inflammation of the cerebro-spinal membranes. It is one of the most difficult problems in clinical experience to diagnose one of these cases in its commencement, as there is really no feature of a distinctive character prior to the inflammatory development; and yet, for all practical purposes the occasion has passed for effective treatment in grave cases when the inflammatory process has been established.

My object in preparing this paper has been to emphasize the great importance of recognizing the gravity of the situation at an early period, by the general symptoms indicative of congestion, and not wait for indications of inflammation to determine upon the nature of the disease.

If there is an epidemic prevalence of cerebro-spinal meningitis, or if other patients have been attacked with it in the same neighborhood, then it becomes a comparatively easy matter to diagnose a case in the formative period; but when the disease occurs sporadically, as it sometimes does, it behooves the practitioner to proceed upon general principles, in recognizing the prodromata of the disease as corresponding in all their essentials to the accompaniments of the grave class of

pernicious fevers; and in noting closely the evidences of congestion, as the typical forerunner of the inflammatory stages of the disease.

If a doubt exists in regard to the ultimate manifestation of the characteristics of cerebro-spinal meningitis, there are still presented phenomena which indicate a recourse to a mode of treatment which is calculated to arrest the development of the disease; and it is to this factor in the case that I have to direct the special attention of the profession. The practicability of controlling a case in which congestion of vital organs is well declared, but without affording the data for a differential diagnosis in favor of cerebro-spinal meningitis, has been verified by me in several instances; and I would much prefer to give my patient the benefit of the doubt, to risking the serious consequences of delay for the purpose of making an assured judgment as to the true solution of the prospective pathological issue. Outside of my own practice I have had an opportunity of observing quite a number of cases of this disease in consultation with different colleagues in this city within the past four years, and they corroborate my statements as to the evidences of vital prostration in the early history of the grave type of cerebro-spinal meningitis. Among the patients thus seen, I may note some cases of special interest which occurred in the Fulton county jail, in the persons of United States prisoners, under the charge of Dr. C. A. Stiles, who has kindly furnished me with the following record:

There were forty-five cases of meningitis of varying intensity—thirty-five of which were cerebro-spinal, and the balance were spinal meningitis—during the spring months of 1885 and '86, treated with the following results:

About 80 per cent. of the latter died and 40 per cent. of the former. The small percentage of fatal results in the former was due to the fact that about one-third of the cases were of a mild type. The onset of this disease was invariably sudden, manifested by chilliness, nausea, vomiting, intense pain in the head, neck, back and lower extremities. Then appeared tetanic spasms or rigidity of muscles of the neck, back and limbs, which sometimes resulted in the neck and back being drawn posteriorly in the form of a bow; the hands and feet being contracted into very unusual positions. There were in some cases painful swellings of the joints of the upper and lower extremities, resembling inflammatory rheumatism. The entire body was sometimes so sensitive, that even the weight of the bed-clothes caused pain. There frequently occurred deafness, impairment of vision and congestion of conjunctiva, with double vision and pupils alternately contracted and dilated or one pupil dilated with the other much contracted. The eye-balls were frequently immovable with a fixed stare. The pulse was sometimes variable,

being at one hour slow and at another accelerated, but diminished in volume and strength, so that at times it was imperceptible. The respiration was slower than natural in most cases. The skin at the outset was almost always abnormally cool, and the temperature below the normal standard. In the majority of cases constipation of the bowels was present; but in others diarrhoea alternated with the constipation. There was often atony of the bladder requiring the catheter to draw off the urine; which was scanty and high colored. When a patient survived the inflammatory condition it gave way to a typhoid character with redness of the tongue, pain in the epigastrium, sometimes extending over the entire abdomen, and vomiting a greenish fluid. On different parts of the body were noted purplish or dark spots, due to subcutaneous extravasation of the blood, connected with the adynamic state of the capillaries. A mild case of this disease frequently runs its course under the use of palliative measures without risk to life. But when the antecedents of such gravity as usually usher in a case of pernicious fever, herald the approach of this disease, we may reasonably presume upon a fatal result if the progressive congestion is not arrested before the development of inflammation, and nothing short of a radical relief of the overpowered nerve centres can avail.

In studying the means of treatment that are generally recommended by writers on epidemic cerebro-spinal meningitis I have been strongly impressed with their inefficiency to arrest the depressing and ultimate disintegrating progress of the disorder, and while the recourse to opiates has, in some cases, seemed to afford relief, it is evident that in most cases it only soothes the passage to the grave.

Instead of clogging the secretions and benumbing the sensibilities by anodynes, there is an urgent demand for restoring the functions of the vital organs and arousing the nerve centres to action, by revulsive applications externally and revolutionary measures internally, which shall bring about a change in the vital forces as promptly as possible. This mode of proceeding, which has been adopted with favorable results in some cases which presented features of gravity, is commended to the unbiassed judgment of those who may have to manage that form of cerebro-spinal meningitis which proves intractable by other means.

Relying upon the special properties of a mixture of calomel and quinine, from having observed the effects of this combination in pernicious or congestive fevers, I have employed this treatment with the happiest effect for the purpose of jugulating the progressive development of the congestive stage of this disease. Sulphate of quinine in doses of 15 grs. with 5 grs. of calomel, in pills or capsules, may be given every two hours until four doses are taken. It will be found that the indi-

cations of local determination to the head may be effectually combatted by placing the lower extremities in a hot mustard bath, while cold is applied to the head. In the meantime a mustard plaster along the spine assists in restoring energy to the nervous system, while similar applications are made to the inner portions of the arms and legs. If the stomach should be irritable 10 grains of bicarbonate of soda with $\frac{1}{8}$ of a grain of sulphate of morphine may be given at intervals for its correction.

For the purpose of illustrating the course pursued in cases which are not arrested by this heroic treatment at the outset, I may give an outline of the report of a case which was published in the May number of the *Southern Medical Record* for 1885.

On the 19th of April I was called to a white boy, $3\frac{1}{2}$ years old, who had been sick for two days previously. There was great heat of the head, with flushed face and dilatation of the pupils, with a mottled appearance of the skin over the body. The pulse was one hundred beats to the minute with marked tension. There was writhing of the body with tossing of his arms and legs, accompanied by a fixed stare of the eyes, and want of mental perception, with repeated sharp outcries at short intervals. The little patient was placed in a tub of warm water with a blanket wrapped around the shoulders and over the tub, so as to keep in the warm vapor. A handful of powdered mustard was mixed with the water. Cold water was applied to the head during the half hour that he remained in the bath. In the meantime he was given the following internal remedy: Sulphate of quinine, 12 grs.; calomel, 4 grs., divided into 4 powders, one every two hours. It was only by prizing his mouth open with a large spoon that the medicine could be poured into his throat. A mustard plaster was applied along the spine.

April 19th.—The combination of calomel and quinine had produced two evacuations from the bowels, the heat of the head was less with some return of consciousness, and the pulse was 90 to the minute with pupils still dilated. There were discolored spots about the knees, and a well defined retraction of the head, with the tongue considerably coated, and decided thirst.

The quinine and calomel were repeated as on the previous day, with directions to follow this prescription by another, consisting of salicylate of soda, 1 drachm, fluid extract of jaborandi, and syrup of orange peel, each 1 ounce, a half teaspoonful with a tablespoonful of water to be taken every two hours.

April 20th.—The symptoms had undergone quite a change, and there was no longer undue determination to the head, while the pulse was 110 to the minute without that tension previously observed. The bowels had been moved again

after taking the calomel and quinine, while the warmth of the general surface was above normal.

April 21st.—The moderate reaction of yesterday had given way to a partial collapse, and the little patient lay in a semi-comatose condition with his mouth partially open, and upon raising the eyelids which were closed, the pupils were found contracted. He was ordered whisky-toddy, and upon being raised to drink it, a striking and extraordinary dilatation of the pupils occurred, manifesting disordered nerve centres. The warmth of the surface was below normal even upon his face and ears. The pulse was 130 to the minute and without tension. The opisthotonos had diminished, and the ecchymosed spots had almost faded away. The urine was passed involuntarily.

He was ordered a tablespoonful, every two hours, of a solution of carbonate of ammonia, having 20 grains to the ounce, and a tablespoonful of good whisky with milk in the intervals, with plasters of mustard to his extremities.

April 22d.—The tendency to collapse had ceased, his mental state was better, and he took his medicine with the milk punch in the intervals without further trouble. The pulse was 120 beats to the minute with better tone, the natural temperature had been restored, while the tongue was clean and moist. The bowels had been moved and urine passed in bed with tympanitic distension of the bowels. A poultice of flaxseed with Peruvian bark was applied to the abdomen.

April 23d.—The patient had improved in all respects with a pulse of 125 to the minute. He was given a teaspoonful of Colden's Liquid Beef Tonic every four hours, continuing the carbonate of ammonia and the milk punch in the intervals. The poultice was removed and a flannel roller with camphorated spirits of turpentine was applied to the bowels.

April 25th.—Not having visited the patient yesterday, it was found to-day that his bowels had too frequently moved with mucous discharges and considerable tympanitis. The pulse was 120 to the minute, and the tongue clean but redder and dryer than natural.

The following was given:

Spirits of turpentine	{3}
Carbonate of ammonia	{3}
Elixir of paregoric	{3}
Camphor water	
Mucilage of acacia, āā	{3ii}

Mix, and take a teaspoonful every two hours. Stop beef extract, and take boiled milk with whisky after each dose of the medicine. Continue spirits of turpentine with camphor to the bowels.

April 26th.—Frequent discharges of mucus with tympanitis, pulse 140 to minute, tongue red and smooth but not dry. Consciousness has returned. In addition to medication of yesterday he takes the following:

Sulphate of quinine	gr. xij
Acetate of lead	gr. yj
Tannin	gr. iv
Opium	gr. ij

Mix and divide in 12 powders.

Take one at intervals of two, three or four hours according to the frequency of discharges from the bowels. Apply red-oak bark poultice to abdomen after rubbing the surface with camphorated spirits of turpentine.

April 27th.—The irritation of bowels ceased after second astringent powder, when they were suspended. The poultice was discontinued, using a flannel roller with camphorated spirits of turpentine upon the abdomen. The tympanitis has disappeared; tongue not slick and red as before, pulse 125 to the minute, and passed the night quietly. Still some stiffness of neck. The terebinthinate mixture was alternated with one grain of quinine every two hours, taking milk punch after each.

April 28th.—Passed a restless night, and shows nervous agitation to-day. Bowels only moved twice in thirty-six hours, the tongue moist with slight coating, pulse 125 to the minute. Gave 5 grains of chloral hydrate, to be repeated hourly for three times, and if not quiet within two hours afterwards, to give $\frac{1}{4}$ grain of morphine. Continue terebinthinate mixture and quinine with milk punch.

Notwithstanding that the neck is still stiff there is no deafness nor impairment of vision and the intellectual faculties are not affected.

April 29th and 30th were passed in a state of great nervous agitation, notwithstanding the free use of chloral and morphine, so that other agents seemed to be required for calming him.

May 1st.—Observing an ash-colored faecal evacuation I inferred that a stimulus to the biliary function was called for, and gave 3 grains of saccharated calomel, with instructions to repeat it every four hours, until the passages should be colored with bile. Within two hours an evacuation indicated a change in the color, and with the correction of the hepatic secretion it was expected that the nervous trouble would be relieved. The pulse was 125, temperature 100° Farenheit, tongue clean, no tympanitis, slight stiffness of neck, the pupils were normal and responded to varying degrees of light.

May 26th.—The closing record of this case notes that there has been no indication, recently, of any febrile excitement; but at times considerable nervous irritability and fretfulness, without any mental disturbance. He is still feeble, but without any consequences of the disease in contraction of muscles or defect of sight or hearing. His nourishment consists of milk punch, soft boiled eggs, etc. This result manifests the impairment of all the vital forces from this disease, even when the most energetic measures are resorted to

at the outset to correct the disturbance of the nerve centres and the derangement of the biliary secretion.

It is evident that the symptoms, indicative of cerebro-spinal meningitis trouble, were controlled by the use of the calomel and quinine, followed by the salicylate of soda and fluid extract of jaborandi; and none of the usual results of the most aggravated cases, such as deafness or loss of sight connected with cerebral effusion, ensued in this case after the expiration of thirty-nine days' sickness, not including convalescence.

The details of this typical case, with many serious developments combatted by special measures, are presented in preference to giving the treatment of other patients, with a view to demonstrate clearly my practice in cerebro-spinal meningitis.

NOTE.—In the person of a vigorous man, about 30 years of age, on June 24, there occurred excruciating pains of the head, with contraction of the muscles at the back of the neck, and vital depression. At 9:30 P.M. he took 10 grains of antipyrin and repeated the same within an hour. He was directed to await the visit of my colleague, Dr. P. E. Murray, at midnight, to determine upon the propriety of a third dose. Upon his arrival the cervical muscles were found relaxed and the pain in the head much relieved, so that he withheld the antipyrin for the night. On visiting the patient next morning, I gave him the remaining 10 grains with complete relief of all the symptoms.

On the afternoon of June 25 he took 5 grains of calomel with 10 grains of bicarb. soda, three times, with intervals of two hours, followed next morning by citrate of magnesia, which had a purgative effect.

June 26 and 27, sulph. quinia was taken in doses of 10 grains and the patient is convalescent.

Was this a case of cerebro-spinal meningitis, jugulated by the antipyrin?

A CASE OF CHRONIC INTERNAL HYDROCEPHALUS.

Read before the Medical Society of the District of Columbia, February 22, 1888.

BY I. W. BLACKBURN, M.D.,

PATHOLOGIST TO GOVERNMENT HOSPITAL FOR THE INSANE,
WASHINGTON, D. C.

The history of the patient, obtained from his mother is as follows: He was at birth smaller than her other children, and no disproportion of the head was noticed at that time. The delivery was accomplished by a midwife, who used strong traction without the assistance of the natural powers, and it is to this violence that the mother attributes the misfortune of her child.

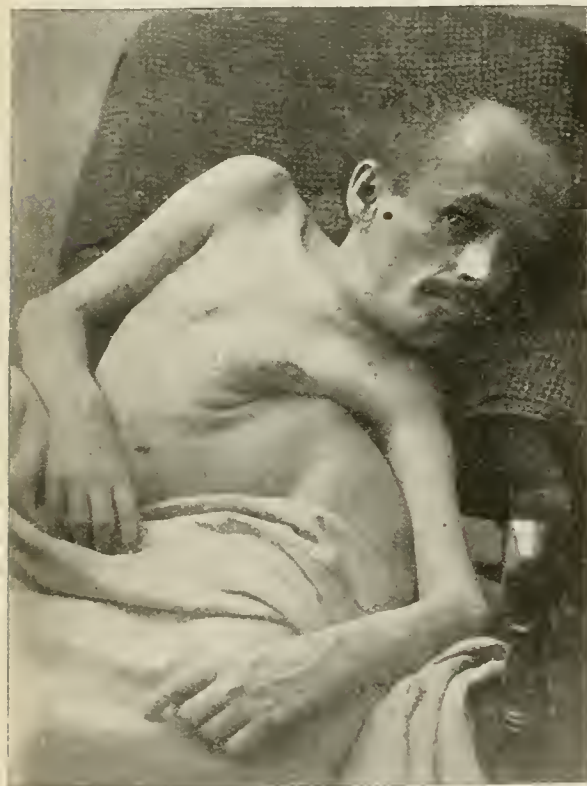
Enlargement of the head was not noticed until the child was three or four months old, when the mother observed a prominence at the posterior

fontanelles. The head rapidly increased in size until at the age of two years it was as large as at his death. The fontanelles remained open until he was seven years of age.

No attempt to walk was made until he was about 9 years old, when he made some efforts at locomotion, but was soon confined to his chair; later in life he used a rolling chair.

In early childhood his spine was straight, but it soon became extremely curved.

His general health was good, due to the extreme care of his mother, but he suffered much from headache, chronic constipation, and some form of urinary disease causing retention of urine at times. He never had convulsions, and though his movements were imperfect he had no distinct paralysis, and no disturbance of the special senses was observed until toward the end of his life.



C. F. Hydrocephalus.

The mental power was, of course, limited, but he had remarkably retentive memory, and though he could not read, having never been taught, he could remember and fairly understand what was read to him.

He was fond of singing and whistling, and could remember both, words and tunes after hearing them a few times.

His moral sense was well developed, and though he was mischievous he was harmless, and he of-

ten expressed his gratitude that he was a cripple rather than a drunkard.

A sense of humor was not altogether absent; he had some appreciation of a joke, and one of his greatest amusements was to look at comic pictures.

His articulation was imperfect, but he could be easily understood by those acquainted with him.

On admission to the hospital he seemed to be much prostrated, physically and mentally; he talked but little, and he was unable to sit erect without assistance.

His age at the time of his admission was 38 years; height, 4 feet 5 inches. The head was greatly enlarged, globular, and slightly flattened at the top, forehead prominent, hair scanty and some baldness of vertex and frontal regions. The scalp was thin and the vessels prominent and tortuous. The eyebrows were elevated and irides partly covered by the under lids. The teeth were irregular and carious. He had a small moustache and "goatee" but the beard was scanty.

The trunk was so much deformed by anterior and lateral spinal curvature that the left iliac crest occupied the corresponding axilla. The body, limbs and genital organs were ill-developed.

Death occurred from exhaustion and with symptoms of an exacerbation of the disease.

Autopsy. C. F., age 38 years; nativity, D. C.; mental disease, imbecility.

Autopsy twenty-four hours after death: Rigor mortis slight; decomposition commencing.

Cranium. The head measured twenty-seven inches in circumference; antero-posterior diameter 9 $\frac{5}{8}$ inches; transverse diameter 7 inches. After removing the scalp the skull was 25 $\frac{1}{2}$ inches in circumference; occipito-frontal diameter 9 $\frac{1}{4}$ inches; biparietal diameter 6 $\frac{3}{8}$ inches. The skull was asymmetrical, the left frontal, and the right occipito-parietal regions being more prominent, making a difference of half an inch between the two oblique diameters.

The skull was thinner than usual and somewhat dense, but the diploe was normal in proportion. The sutures including the frontal, were all well marked in the external table but the lambdoid and sagittal were obliterated in the inner table. No ossa triquetra were found. The depressions made by the convolutions and the meningeal arteries were unusually distinct. The cerebral fossæ seemed more shallow than usual, the orbital plates were somewhat flattened, and the pituitary fossa large and deep.

A paraffine cast was taken of the interior of the skull; it displaces about 98 $\frac{1}{2}$ ounces of water, showing the cranial capacity to have been about 178 cubic inches.

Brain. The dura mater was normal in appearance and not adherent to the bone; the pia mater was normal; the cerebral vessels moderately filled, and the arteries at the base were healthy.

While removing the brain the ventricular cavity was accidentally opened and 57 ounces of clear fluid escaped. The brain collapsed and lay in folds at the base of the skull.

The brain weighed $43\frac{1}{2}$ ounces; the left hemisphere, $20\frac{1}{4}$ ounces; the right, 18 ounces; the cerebellum, pons and medulla $5\frac{1}{4}$ ounces.

The convolutions were much flattened, the fissures shallow, and some of the latter were obliterated. The central fissure and convolutions were distinct on both sides and the fissures and convolutions of the occipital lobes were but slightly altered.

The cerebral substance was in some places not over $\frac{3}{8}$ of an inch in thickness. The thinnest portions were in the left frontal lobe and the right frontal and parietal lobes; the right side was considerably thinner than the left.

On opening the ventricles the lateral and third were found to be greatly dilated, having a capacity of at least 54 fluid ounces. The aqueduct of Sylvius and the fourth ventricle were not dilated. The gray commissure had been destroyed, the septum lucidum extremely attenuated, and the foramen of Monroe greatly enlarged. The basal ganglia were flattened and distorted and a small brown softening was found in each lenticular nucleus.

The ependyma was thick, tough and fibrous, and in some places had a reticulated appearance.

The brain tissue was pale and somewhat softened by post-mortem change.

The cerebellum, pons and medulla presented no unusual appearances except that the lining of the fourth ventricle was in a condition similar to that of the other cavities. The thorax was much deformed and the lungs corresponded in shape to that of the thoracic cavity. A few scattered calcareous nodules were found in the right lung.

The heart was small, but otherwise normal.

Spleen weighed $1\frac{1}{4}$ ounce, pulp normal.

Liver normal; gall bladder contained nine rough calculi.

The left kidney weighed 3 ounces; the right, $2\frac{1}{2}$ ounces; structure apparently normal.

No mechanical or other cause was discovered for the effusion, but the condition of the ependyma indicated that the disease may have originated in a chronic inflammation of this membrane, and that the process was arrested in time to allow of closure of the sutures without the formation of supernumerary bones.

SEA-WATER IN LONDON.—The London Sea-water Supply Bill has passed both houses of Parliament. The sea-water will be brought to London from Sussex County. It is thought that the works will be completed by 1890. As London grows the supply of fresh water becomes scarcer, and it is hoped that the sea-water will be used for bathing and street watering.

RADICAL CURE OF PTERYGIUM.

Read to the Mitchell District Medical Society, at French Lick Springs, Indiana, June 22, 1888.

BY DUDLEY S. REYNOLDS, A.M., M.D.,

PROFESSOR OF GENERAL PATHOLOGY, HYGIENE, AND DISEASES OF THE EYE AND EAR, IN THE HOSPITAL COLLEGE OF MEDICINE, MEDICAL DEPARTMENT OF CENTRAL UNIVERSITY OF KENTUCKY, LOUISVILLE.

Pterygium has been variously described as being cicatricial in its nature, as due to small ulcerations in the limbus conjunctivalis, and as a genuine hypertrophy of the conjunctiva. A little attention to the anatomical characters of pterygium will show that the portion in contact with the fascia is made up almost entirely of abnormal connective tissue fibre.

It will be observed that the pterygium is not so broad upon its under surface as it is externally. There is a well-marked fold running longitudinally along its margins from apex to base. This marks the site of cicatricial tissue, which causes contraction to take place at the bottom of the growth, which seems to be most dense at the limbus of the conjunctiva, whilst that part which seems to overlap the cornea is formed by a folding in of that portion of the anterior elastic layer of the cornea which is involved in the apex of the growth. The capillary blood-vessels at the limbus of the conjunctiva are observed to be much altered. They are irregular in form and size, presenting the appearance of the new capillaries in callous tissue. The amount of connective tissue fibre and the number of wandering cells in the substance of the morbid growth serve to swell its bulk. If the pterygium be excised, the tendency to cicatricial formation is commensurate with the number of vessels divided. If no infecting material gain access to the wound, a large mass of irregular connective tissue fibre results from the changes which take place in the leucocytes and the wandering cells found in the loose network of cellular tissue always abundant in the ocular conjunctiva.

Arlt and Hasner have given much attention to this subject. They are persuaded that ulceration of the cornea at its periphery has little or nothing to do with the development of a pterygium. The well-known pinguecula which results from ulceration of the limbus conjunctivalis is always a purely local affection. It may be frequently observed in persons who have had purulent conjunctivitis with chemosis. In these cases, the loss of surface epithelium allows the overlapping conjunctiva to become adherent to the anterior elastic layer of the cornea; and when the infiltration disappears as the swelling goes down, the little loops of the conjunctiva which were folded up are attached to the surface of the cornea, and present the characteristics of what is commonly called pinguecula. This never extends out over the surface of the globe. It does not correspond to the direction of one of the recti muscles. On the other hand, pterygium always overlies one of the

recti muscles; it always extends either from the caruncle or from the sulcus of the palpebral fold; it is always both broader and thicker at its base; thinner and more vascular as it proceeds towards the apex. The apex is always formed by a folding in of the anterior elastic layer of the cornea; and the greater the amount of cicatricial tissue developed at the bottom of the apex, the further will the apex of the pterygium extend upon the corneal surface, the tucking in of the edges being brought about by the contraction of the abnormal connective tissue which results from an interruption of the passage of the leucocytes through the subconjunctival cellular tissue into the organized lymph tubes designed by nature to receive these cells.

It is clear, therefore, that pterygium partakes of the nature of a neoplasm. There can be little doubt it begins in the presence of some local irritation, which may perhaps be brought about by the presence of particles of sand, or such other irritating foreign matter as may be lodged upon the surface of the exposed portion. Wherefore pterygia are most commonly observed on the nasal or temporal side, by far the most frequently on the nasal side, owing, no doubt, to the facility with which minute particles of foreign matter gain access to the semilunar fold, where the irritation which leads to the flooding of the subconjunctival cellular tissue in this region with leucocytes, through the dilated capillary vessels, is brought about. Pterygium may, therefore, begin its development in an insidious manner and remain stationary for an indefinite period. Once begun, however, it may be incited to fresh activity in the presence of those causes which originally inaugurated it. Once the anterior elastic layer of the cornea is fairly invaded, the disturbance in the outlet of the leucocytes in the capillary loops of the limbus of the conjunctiva being permanently established, this portion of the growth advances with great rapidity. It is, therefore, important that some operative interference with the advancement of the corneal invasion should be instituted as soon as active development has begun, because that portion of the cornea invaded can never be fully restored to its normal transparency; and so the pterygium should not be permitted to advance into those portions of the cornea through which light is transmitted to form visual impressions on the retina.

Nearly all of the operations that have been suggested have proven unsatisfactory. There are two forms of operative interference, however, that may be accounted fairly successful, namely: the complete excision of the whole mass, and the closure of the resulting wound by stitching the normal conjunctival membrane together with fine silk sutures. There should be incisions made at right angles to the line formed by the wound made in the removal of the pterygium, to allow the flaps

of the conjunctiva to stretch well over the surface which the morbid growth occupied. It should be remembered in dealing with the apex of the growth, there must be no mistake about the removal of the whole amount of morbid tissue. It is better, therefore, to tear off that part which is attached to the cornea by grasping the whole of the pterygium in the limbus of the conjunctiva with Graefe's fixation forceps, and making such traction upon the pterygium as will completely tear off from the corneal surface the whole apex of the growth.

Another method, and the one which I prefer, is a slight modification of Pagenstecher's operation. Pagenstecher dissects off the apex of the pterygium and, turning it back, closes the conjunctival wound with sutures.

This represents the outline merely of the operation that I have found most successful. My plan is to tear off the apex of the pterygium from the surface of the cornea and, if any small portions should remain adherent, to shave them off carefully with a cataract knife. It is better, even, to cut into the proper substance of the cornea, removing a small portion of the unimplicated tissue, than to leave even one abnormal connective tissue fibre on the surface; for this will certainly undergo persistent contraction. The next step in the operation is to divide the normal from the abnormal tissue along the margin of the morbid growth, down to its base. Then, seizing the apex of the growth with the forceps, the loose connective tissue which holds it to the surface of the ocular fascia may be severed with scissors. A free flow of blood should be regarded as auspicious. The conjunctiva may then be stitched together, and circular incisions made both above and below, corresponding to the corneo-scleral juncture, for the distance of $\frac{1}{4}$ -inch from the line of union sought to be established by the sutures. Radiary incisions should then be made in the vertical meridian sufficiently to allow the ocular conjunctiva to stretch freely over the surface without having it thrown into folds. Incisions may be made at right angles to the line of union at the base of the pterygium, to relieve tension at this point. The pterygium itself should be allowed to lie undisturbed in its basilar attachments. The sutures will come away from the conjunctiva in three or four days at most, when good union will be found to have occurred along the whole line, while the pterygium itself undergoes rapid shrinkage, and disappears by the resorption of its constituent elements.

This character of operation may be made applicable to all forms of pterygium. Having practiced the operation for more than fifteen years, and never having witnessed a return of the growth at the site of its original development, I am persuaded this method is entitled to rank as a radical cure.

MEDICAL PROGRESS.

DIAGNOSTIC VALUE OF INSPECTION OF THE URETERS IN SYMPTOMLESS HÆMATURIA AND PYURIA.—MR. E. HURRY FENWICK says: In the exploration of the bladder with the electric light it is necessary to have some such starting point in order that the examination may be systematic, rapid and effective. The most important section of the bladder, speaking cystoscopically, is the inferior zone, and the cardinal points in this area are the orifices of the ureters. Upon them the operator should first direct the light, and from them the search should radiate. There are several reasons for this choice. From the orifices of the ureters may be seen to issue fine jets of renal blood in kidney bleeding, the semi-vividness of which may prove fallacious (without the cystoscope) in the diagnosis of the source of symptomless hæmaturia. Upon their lips or in their immediate neighborhood are most often to be found those tumors which can baffle diagnosis.¹ Moreover, their appearance, their clean-cut, slit-like openings, or their tumid, gaping mouths—that is, their healthy or unhealthy aspect—is an index to the soundness or unsoundness of the remainder of the mucous membrane, which cannot be neglected in the treatment or prognosis of disease.

In hæmaturia I generally first satisfy myself that the ureters are free from tumors, and then make a rapid survey of the rest of the bladder, proceeding from below upwards (that is, inversely to the tendency the zones evince to growth).² If I can find no cause for hæmorrhage I return to the orifice of each ureter, and watch the color and amount of its efflux. In three cases lately I have thus been able to detect the renal source of symptomless hæmaturia, which otherwise I might have overlooked.

Case 1.—Mr. B., consulted me in January 1888, in reference to a hæmaturia. He brought with him a specimen of bloody urine containing much clot. His history was as follows: In January, 1886, he had been out riding for two hours, and came home completely chilled. He passed blood the same evening. He suffered no pain or inconvenience, except a slight urethral tingling when the clots were passing. The hæmorrhage stopped in the summer, but recurred in the winter of 1887, to cease once more upon the advent of the warmer weather.

Present Condition.—“A well-built, anæmic man, æt. 30. The urine is voided thrice a day. No

pain attends the act. He suffers ‘agony’ after coition, in the neck of the bladder. In micturating he has noticed that the urine often becomes more bloody towards the finish.”

I expected to find a vesical growth with the electric light, but nothing abnormal could be discovered. The entire bladder was healthy. I was just giving up the examination in despair, when I saw a stream of brightish blood shoot right across the prism. Keeping the instrument fixed, I waited until the medium became clear again, and then I found that I was watching the orifice of the right ureter. In another second a jet of bloody urine burst from the tiny opening, and, after forming many rings, paled by diffusion and disappeared, but only to be replaced by a successor. The phenomenon of efflux suggested to my mind a miniature cuttle-fish, squirting out its colored fluid into the water around. The right renal source of the hæmorrhage was at once indicated.

Case 2.—Mr. C. (under the care of Drs. Underwood and Harvey), a well-built man, æt. 52. Since May, 1887, he had suffered from hæmaturia, which was painless and intermittent in its character, and seemed more dependent upon exercise than anything else. The urine was passed thrice a day. He was disturbed only once at night. Some specimens of hæmaturia contained cylindrical clots. I passed the electric cystoscope under cocaine, and found a low collarette of prostatic growth, but it was obviously not the cause of the hæmorrhage. The bladder was healthy. I could see jets of blood issuing from the right ureter, and the diagnosis of the site of the trouble was at once established.

Case 3.—A lady, under the care of Dr. Hewitt, of Manchester, and Dr. Battersby, of Cannes. For eighteen months the patient had suffered from hæmaturia. The urine varied much in color, but there were no symptoms whatever to afford a clew as to the exact source of the bleeding. The electric cystoscope (No. 30 French gauge) showed the bladder to be perfectly healthy, but on turning the instrument towards the left ureteral orifice, a spurt of bloody urine flowed over the prism. I allowed the ureter to play upon the prism, in order to judge of the rhythm of the flow, but it never varied, although Drs. Hewitt, Lys, and I watched it for some little time. It was rather like an artery severed under water. I could detect no renal tumor in any of these cases.

These cases are sufficient to illustrate the value of inspecting the orifices of the ureters by means of electric light, and of excluding the kidneys as a source of the hæmaturia; moreover, the same advantage can be gained in pyuria, and the many methods and instruments advised and devised for obtaining urine direct from either kidney must now be partially superseded by the electric light.

¹Single villous papillomata are found at the right ureteral orifice in 43 per cent., and at the left in 26 per cent. of the cases. Fibromata and small single myxomata in 90 per cent. of the cases are situated at the ureteral orifices. Author, *Lancet*, March 10, 1888.

²The liability of the three zones to become affected by single cancerous growths may be expressed thus: The upper: middle: lower zone :: 1:3:6. Author *Pathological Transactions*, Carcinoma of the bladder, 1888.

The urethral orifices are not difficult to find. They are very rarely displaced, and still more rarely are they absent. A little tact in manipulation and knowledge of the cystoscope will bring them into view, and amply repay the operator for examining them.—*Brit. Med. Jour.*, June 16, 1888.

THE "POLYCLINIC CARRIAGE" FOR EXTENSION AND COUNTER-EXTENSION.—DR. A. B. HIRSCH, of Philadelphia, has designed a simple apparatus to keep up continued traction—therefore, rest—while securing the advantage of out-of-door atmosphere. Its first occupant was a stout 2-year old boy, of the flaxen-haired, strumous type, the subject of incipient coxalgia. The value of complete rest in bed in this disease, with the difficulty of obtaining good hygienic surroundings in so many city homes, particularly in the summer season, are familiar. The "carriage" was therefore planned to meet these objects.

The carriage is an ordinary wicker-work perambulator, the body of which has been lengthened to fit the size of the patient by dividing vertically and exactly in the middle both the head and foot pieces, which are then straightened out and a new bottom made, neatly painted wooden boards being inserted to fill out the spaces at either end. Inside the entire length of the bottom of the body is placed an inclined plane of very light pine board, which rests in front on a block some two inches high. This inclines the child's body sufficiently upward to furnish a weight of three pounds, when the rubber band, to be mentioned later, is stretched about twelve inches. A light hair mattress and pillow suffice to cover in the bottom of the carriage. Sandbags prevent any lateral motion.

The ordinary adhesive strap and stirrup apparatus being attached to the limb from below the hip (in this case the left one), a cord is fastened through the middle of the stirrup, passing through two screw eyes, one fastened to the footboard opposite the instep and the other at the right-hand angle. Then the cord passes backward to a heavy rubber band fastened to a hook screwed into the headband alongside and above the child. Any increase of traction can be made by simply further stretching this band, originally intended for closing doors when ajar. It was my intention to pass the cord from the stirrup, through the footboard and under the body of the coach, so as to attach a weight, but Dr. H. Augustus Wilson suggested the use of screw eyes and rubber band. His improvement, besides simplifying the apparatus and making it more slightly, avoids the painful jarring made in passing over gutters and all other rough surfaces.

In a similar coach since made, I obtained a greater inclination backward by simply screwing a hook underneath the body and fastening an-

other such heavy band which passes around the rear axle.

The idea can, of course, be elaborated for more fastidious patients. The parts needed for the coach are supplied in Philadelphia by Gustavus A. Gefvert, orthopedic machinist, and Messrs. Charles Lentz & Sons, No. 2130 Master street, surgical cutlers.—*The Polyclinic*, July, 1888.

ARTIFICIAL FEEDING OF INFANTS.—DR. A. JACOB, of New York, in a paper on the "Therapeutics of Infancy and Childhood," in the *Archives of Pediatrics*, says:

The principal substitutes for breast-milk are those of the cow and goat. The mixed milk of a dairy is preferable to that of one cow. Cow's milk must be boiled before being used. Condensed milk is not a uniform article, and its use precarious for that and other reasons. Goat's milk contains too much casein and fat, besides being otherwise incongruous. Skimmed milk, obtained in the usual way, by allowing the cream to rise in the course of time, is objectionable, because such milk is always acidulated. The caseins of cow's and woman's milk differ both chemically and physiologically. The former is less digestible. There ought to be no more than 1 per cent. of casein in every infant food. Dilution with water alone may appear to be harmless in many instances, for some children thrive on it. More, however, appear only to do so; for increasing weight and obesity are not synonymous with health and strength. A better way to dilute cow's milk, and at the same time to render its casein less liable to coagulate in large lumps, is the addition of decoctions of cereals. It has been stated before, that a small amount of starch is digested at the very earliest age. But cereals containing a small percentage of it are to be preferred. Barley and oatmeal have an almost equal chemical composition; but the latter has a greater tendency to loosen the bowels. Thus, where there is a tendency to diarrhoea, barley ought to be preferred; in cases of constipation, oatmeal. The whole barley-corn, ground for the purpose, should be used for small children, because of the protein being mostly contained inside and near the very husk. The newly-born ought to have its boiled milk (sugared and salted) mixed with four or five times its quantity of barley-water; the baby of 6 months equal parts. Gum arabic and gelatin can also be utilized to advantage in a similar manner. They are not only diluents, but also nutrients under the influence of hydrochloric acid. Thus in acute and debilitating diseases which furnish no, or little, hydrochloric acid in the gastric secretion, a small quantity of the latter must be provided for.

ALUM IN FURUNCLES OF THE EAR.—GRASH reports good results from alum solutions in furuncles in and about the ear.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES:.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, AUGUST 4, 1888.

SIoux MIDWIFERY IN CHICAGO.

We have lately encountered a striking example of irresponsible opinion, that is especially noteworthy as well on account of the vital moment of the issue, as by reason of its professional origin. As Kucher has aptly written, we must allow any physician the utmost liberty in his view and treatment of those morbid and physiological conditions, the nature of which is still in a measure conjectural. In the management of a case of hysteria, or in the administration of many internal remedies, the greatest latitude of opinion must be permitted. But in matters of vital moment, about which we have the firmest convictions, based upon the most conclusive evidence, no such differences of view can be for one moment tolerated. There is none of us that hesitates to denounce as an ignoramus or humbug the physician that proposes faith cure or some internal remedy for a luxation. Our intolerance is only intensified when such a physician alleges long and successful experience with the aforesaid therapy.

The case in point relates to a peculiar method of management of the third stage of labor, and the advocate of the procedure is a woman, that alleges the successful employment of the method for twenty-five years, in an experience of more than one thousand cases of confinement. She is legally qualified to practice medicine in the State of Illinois.

In an unique essay, recently published and

widely circulated, she formulates the following conclusions:

1. "The uterus of the parturient woman should, in each and every case, be examined immediately after the expulsion of the fœtus, before the lower or cervical portion of the organ has had time to contract.

2. "This, the only opportunity of gaining a perfect knowledge of the condition of the uterine walls and annexa, should not be lost, as it can be done without injury to the patient, but to her great advantage.

3. "The parturient uterus should be as perfectly cleansed as possible. If there are such firm adhesions that they cannot be removed by gentle manipulations, we should advance the welfare of the patient by thorough irrigation of the genital tract, and by hot poultices to the abdomen. This should be done because high temperature hastens the sloughing process; and as ordinary observation has taught us that old decaying matters are less poisonous than fresh, we have good reasons for hastening the process. This explains, too, why a woman who absorbs poisonous matter during the later periods of childbed has better chance of recovery than one who becomes infected within the first twenty-four hours. It is said that this is because the uterus is further advanced in reconstruction, but this can only hold good with a uterus that had been wholly emptied, immediately after the birth of the child, because the uterus is not in a condition of perfect involution at the third day, and certainly not if left to its own devices."

In her own words, this female makes it "a fixed rule to examine the uterine cavity in each and every case of confinement, and to remove the placenta by passing the right hand up to its insertion and detaching it by friction with the finger aided by the left hand on the outside, carrying it down and out into the vagina. Then," she writes, "going over the organ again I gently remove the still adherent membranes, rubbing the velvety place of placental insertion in order to prevent any undue fibrous occlusion of veins, I am convinced of the usefulness—no, the necessity—of such a practice."

A patient cheerfully describes the procedure thus: "Dr. — take the insides out of me, the same as I would take them from a chicken, and I feel as well afterward as if nothing had occurred."

While the woman, herself, naively volunteers the information, "I know the condition of a woman's pelvis after I have attended her in parturition as I know her face."

We do not intend to reflect upon the intelligence of our readers by any discussion of this monstrous procedure. The author's own words are sufficiently damning and we can add nothing to their fatal evidence.

It is at once apparent that the method is both needless and meddlesome. The adequacy of the Dublin or Credé's mode of placental delivery has long been demonstrated by the universal experience of the profession. Thus out of 48,249 labors, in the lying-in wards of Carl Braun¹, during 11 years—1862-1872—the placenta was expelled by this method in 48,132 cases, or 99.8 per cent. It was found necessary to detach the placenta by the hand introduced within the cavum uteri in only 117 cases, or 0.02 per cent., or once in 500 cases.

The terrible danger of infection must be obvious to the most casual observer, to say nothing of the interference with puerperal thrombosis, the risk of air embolism and the like.

Just at the present time, too, in the light that the researches of Schröder, Stratz and others have thrown upon the physiology of the third stage of labor, the broaching of such a gratuitous and pernicious doctrine seems peculiarly inopportune. It is an anachronism. This method was extensively employed many years ago by the semi-civilized midwives of China and Russia, and a closely similar custom formerly obtained among certain tribes of North American Indians—notably the Sioux, Cheyennes, Arrapahoes and Papagos.² It must be admitted, however, that in general primitive peoples have placed main reliance on abdominal expression—the use of a *vis a tergo*—in the delivery of the placenta, and they have in some degree appreciated the dangers from traction on the cord and manual removal.

For the sake of the poor unfortunates that are liable to fall victims to this brutal relic of barbarism, we trust the practice will receive the immediate attention of the State Board of Health. Certainly such flagrant transgression of the laws of medical science demands serious investigation at the hands of the guardians of the public health.

A GASTROLITH IN MAN.

In the *Zeitschrift für klinische Medizin*, Bd. xiv, Hft. 3, KOOVKER describes the remarkable case of a druggist, aged 35, who had a circumscribed tumor of the abdomen, occupying the epigastric and almost the whole left hypochondriac region. Its position was changed by the respiratory movements. It was the seat of spontaneous pains; and pain was also produced by pressure on the neoplasm. These pains subsided somewhat under a strengthening régime and the use of condurango bark. The appetite was increased, and the alvine evacuations became normal. At times the patient vomited a large quantity of mucus mixed with bile. The vomited matters rarely contained free hydrochloric acid. The patient said that he had a continual nausea, and that he had vomited blood. Emaciation and pronounced cachexia finally came on, with indolent tumefaction of the axillary and subclavicular ganglia. He refused to have exploratory laparotomy done, and the diagnosis of cancer of the pylorus was made.

At the autopsy the stomach, which was of normal size, was found to contain a concretion that almost completely filled the stomach, and having its form. Two small concretions filled the pyloric region of the stomach. The large gastrolith weighed 885 grams, was 18 cm. long, and 8 cm. thick (7.2 inches by 3.2), and of a brownish color. In place of a nucleus there was a small cavity, as large as a hazel-nut, in the centre of the concretion. The cut surface showed no concentric stratifications. The mass had a feculent odor, and contained no skatol. Microscopic examination showed that it contained starch corpuscles, vascular fasciæ, and vegetable cells containing chlorophyl, but there were no organized elements belonging to the animal kingdom. Chemical analysis showed that it did not contain more than 0.56 per cent. of nitrogen. The mucous and muscular coats of the stomach were thickened, and in the region of the cardia the mucous coat was studded with projections of papillomatous tissue.

It seems that an exploratory laparotomy, which the patient refused, might have been the means of saving the life of this patient.

DR. KIESSELBACH, Privat Docent at Erlangen, has been made Professor Extraordinarius in the Otiatric Clinic and Polyclinic.

¹Lehrb. d. g. Gynæcologie. Wien, 1881. p. 182.

²Geo. J. Engelmann, Labor Among Primitive Peoples. St. Louis, 1883. p. 153.

EDITORIAL NOTES.

A HANDBUCH DER SPECIELLEN KLIMATOTHERAPIE UND BALMOTHERAPIE will be soon published by H. Reimer, of Berlin.

DR. SERAPIO ARTEAGA, a distinguished physician of Havana, and well-known contributor to medical literature, died in Mexico on July 6, of cerebral congestion.

MM. HÉVARD AND CORNIL, with the assistance of M. Hanot, have just issued through Felix Alcan the second edition of their classical work "*Traité de la Phthisie Pulmonaire*," which has been out of print for some time.

ADULTERATION OF MILK.—DR. H. THORNS, in examining a sample of suspected milk, found ultramarine blue, in the proportion of 0.0823 per litre. This milk, when left for a time, showed a bluish color at the surface.

THE "REVUE SCIENTIFIQUE DES FEMMES" is a new journal recently founded in Paris, and edited entirely by women. It is edited by Mlle. Edwards, interne of the hospitals of Paris, Mlle. Chenu, licentiate in mathematical sciences, Mme. Brès, M.D., Mme. Simonnet, B. Sc. and professor of physics, and Drs. Mmes. Conta, Kraft, and Rose Perrée.

THE PROPOSED MEMORIAL TO VON LANGENBECK is to be in a form of a building, the "Langenbeck-haus," which, according to the *British Medical Journal*, is intended to be a home for all medical associations, and a place for scientific gatherings. The names of the late Emperor Wilhelm I and his Empress Augusta stands at the head of the list, and it was the Empress that suggested that the memorial should be a building rather than a statue.

SACCHARIN, says M. C. PAUL, has valuable antiseptic properties. It is this fermenticide action of it that acts on the gastric juice and retards digestion in certain diseases. Paul says that numerous experiments on a large number of microbes have shown the antiseptic properties of saccharin. It is an antiputrescent; in 1:200 solution it arrests ammoniacal fermentation of urine. In the same solution it arrests the development of bacterium termo, in a 1:300 solution it retards, but does not arrest the development of the strepto-

coccus of puerperal fever, and in a 1:500 solution it arrests the development of the staphylococcus pyogenes aureus. As the drug is eliminated entirely by the kidneys, it may be asked if it will not act favorably on pyelitis and pyelo-nephritis. Clemens has had good success with it in two cases of vesical catarrh with ammoniacal urine. Saccharine may be substituted for boracic acid for washing out the bladder.

AMERICAN MEDICAL ASSOCIATION.

Report of the Committee upon the Coroner System of the United States.

Made at the Thirty-ninth Annual Meeting of the American Medical Association, May 1888.

This Association imposed upon your Committee a task of no slight magnitude, in requiring a report upon the Coroner System of this great country. The work of collating and digesting the laws, as existing in the various States required much time and thought. This has been, however, simplified in a great degree by utilizing the publication of Dr. John G. Lee, entitled, "Hand-Book of Coroners," Philadelphia, 1881.

Your Committee also placed themselves in correspondence with the Secretaries of the various State Boards of Health and elicited a mass of correspondence, comment, and facts of very great value. To these authorities we take much pleasure in acknowledging our obligation, and upon a careful examination of the same we find almost without exception, comes the criticism of faulty results from inherent defects in the present laws.

A careful analysis of the Coroner's laws reveals the fact that their preparation and scope, with only slight modification have been made in transcript from the old English code of time-honored custom. The important exception, however, is noteworthy, that they have been adapted to *American politics*, by the party in power usually giving the office to the holder, too often as a subsidy for supposed services rendered, rather than because of fitness to discharge duties of so great importance to the State.

In the progress of legal learning, as well as in medical requirement, these two great branches of special knowledge have greatly outgrown their former status and to be well versed in both is utterly beyond the training and education of the present generation. The former idea of fitness, fundamental to the Office of Coroner, was a medley of both legal and medical knowledge, without specific limitation or definition. Resulting therefrom, has grown up such indefinite ideas pertaining to the office and duties of Coroner that,

in many instances, he has been appointed without knowledge of either law or medicine, and under the laws existing in most of the States it is about equally the mistake to select the Coroner from either of the professions.

In one of the large cities, through which we passed on our way to this meeting, a delegate to the Association informed us that the office was held by a colored man and an Irishman, and this by illustration of neither color or race prejudice, but to the manifest low order to which the office had fallen, since these men were both illiterate. Dissatisfaction necessarily results from incongruities arising under such laws as well as from the improper selection of men manifestly unfitted to discharge duties often so vital to the well-being of the body politic.

From the legal profession protests are constantly being made that the high ends of justice often fail under our present laws; while for many years from one end of the land to the other has gone out a demand from our own profession for a radical reform. So deeply ingrained, however, is the system into the body politic, with the power and influence of the present-office incumbents and the lack of concerted combined action, that very little progress has been made in the right direction.

Dr. Quimby, in his address last year before this Association, very properly called attention to this great national necessity, and as a result of his earnest appeal your Committee were appointed.

Granting the necessity of reform based upon such abundant testimony, your Committee have thoughtfully considered the measures to be commended from which a better system may be evolved.

Fortunately they are not entirely without precedent and experience to guide them. Eleven years ago, after much labor and concerted effort, Massachusetts abolished her Coroner's system and passed an Act providing for medical examinations and inquests in cases of death by violence. We are indebted to Dr. Samuel W. Abbott, the efficient Secretary of the State Board of Health for much information upon the working of the law. The system of Medical Examiners meets with a very distinct general approval, and has the hearty coöperation and support of the medical profession.

Since the passage of the law about 15,000 cases have been investigated by the Examiners. As compared with the same amount of work under the old law, the expense has been considerably lessened, while the results have been vastly improved.

Connecticut adopted, in 1883, a new law electing a lawyer as a coroner for each county, and a medical examiner for each town. I briefly extract from a letter received from Dr. M. C. White, Medical Examiner for New Haven: "One feature of our new law giving all the business of the

county to one lawyer secures immediate investigation by an experienced officer who understands law and the best methods of examining witnesses. . . . He must investigate immediately all suspicious cases. He may call a jury. All this works admirably. Three-fourths of all the sudden, violent, or untimely deaths are disposed of by the medical examiners, reported and recorded, but require no legal investigation, since there is no suspicion of crime. . . . After nearly five years of experience under the present law I think the defects or questionable points are so few that we may say there is pretty general satisfaction with the law."

Rhode Island adopted a new law somewhat recently similar to that of Massachusetts, and Dr. Charles H. Fisher, Secretary of the State Board of Health, writes me that "it is a great improvement upon the preceding law and methods."

Your Committee desire to formulate in greater detail the results of their labors, much of the material which they have received being of value, but manifestly quite out of time and keeping for this occasion, but they commend for earnest consideration in each of the several States the following propositions:

1. To abolish the office of Coroner.
2. To dispense with jury service.
3. To separate the medical from the legal duties in all cases involving the examination into the causes of death where crime is suspected.
4. To entrust the medical examination only to competent medical officers properly trained in their work.
5. To make the number of these medical officers as small as consistent with the proper discharge of their duties.
6. To consign all questions of law only to properly qualified legal magistrates.
7. To remove the appointment of these officers entirely from the question of political consideration, and to be based only upon their possession of the requisite and proper qualifications.

Upon some basis of this character should the Coroner's law be revised. Much useless expenditure of time and money will be avoided, often great sorrow and anxiety will be prevented, and that which is of vastly greater importance, the ends of justice will be far better served.

Owing to the vital importance of the subject, the difficulties of carrying into effect a sweeping revolution of time-honored customs, and in the hope that this great central organization may in some way be of service to any State endeavoring to secure a better law, your Committee, much against their personal desire, are constrained to ask to be continued for another year with the power of enlarging its numbers if deemed advisable.

Thus, with ample time to review and select from the material on hand, and that which may be for-

warded to us by all interested in the subject, we shall hope to give a *résumé* of the Coroner's laws, their workings, defects, and suggestions as to reform and to the establishing of laws which shall be effective in every State of the Union.

HENRY O. MARCY, of Boston.

J. H. HOBART BURGE, of Brooklyn, N. Y.

W. W. DAWSON, Cincinnati.

SOCIETY PROCEEDINGS.

American Ophthalmological Society.

Twenty-fourth Annual Meeting, held at the Pequot House, New London, Conn., July 18 and 19, 1888.

WEDNESDAY, JULY 18, FIRST DAY.

THE PRESIDENT, DR. W. F. NORRIS, of Philadelphia, called the Society to order.

The deaths of Dr. C. R. Agnew, Dr. E. G. Loring and Dr. Joseph Aub, were reported.

DR. H. D. NOYES, of New York, read a memoir of the late Dr. C. R. Agnew.

DR. C. S. BULL, of New York, read

A CONTRIBUTION TO THE TREATMENT OF MEMBRANOUS OPACITIES IN THE VITREOUS.

These opacities in the form of membranes or shreds are rarely freely movable and usually resist internal treatment. Operation by incision with a needle was first performed by von Graefe. In the experience of the writer the operation had been found useful. Some opacities, as a result of hemorrhage or inflammation of the choroid, sometimes respond to internal remedies, but as a rule these fail. By incision of the membrane a direct improvement of vision may be obtained and the process of absorption may be stimulated. Posterior opacities are more easily reached, with less danger to the lens and with more favorable results, than in the case of anterior opacities. The author has done this operation in seventeen cases of chronic membranous deposits in the vitreous. In some cases the ordinary decision needle was used, in others a broader needle, and in a few a slender cataract knife. Cocaine was employed in all cases. The point selected by preference for the introduction of the needle was just in front of the equator of the eye and below the insertion of the external rectus muscle. There seems in this operation to be no danger of loss of vitreous through the small opening, nor is there danger of hæmorrhage. The puncture should be posterior to the ciliary process and pressure with the forceps should be avoided. Little or no reaction follows the operation as a rule. A protective bandage is required only a few days. Antiseptics was employed in all cases.

The details of the seventeen operations on

fifteen patients were given. Fourteen showed decided improvement in vision; three were failures. There was no loss of vision from the operation in any case. The operation is appropriate in certain cases, but it is wise to wait until all inflammatory symptoms have subsided before attempting any operative procedure. The eye should be absolutely free from all irritation before surgical interference is attempted.

DR. F. BULLER, of Montreal, read a paper on

A CASE OF PULSATING EXOPHTHALMOS CURED BY LIGATION OF THE COMMON CAROTID.

The author had seen four cases of this affection. In the first the condition followed a blow upon the head. Some months after the appearance of the pulsating exophthalmos, ligation of the carotid was performed, but the patient died in the course of a few weeks from repeated attacks of epistaxis.

The second case has already been reported. In the third case the affection followed a blow on the brow from a piece of iron. The patient was seized with severe epistaxis and died in a few minutes. There was found a depressed fracture of frontal bone with a fissure extending across the orbital roof and body of sphenoid bone, directly beneath the cavernous sinns. As a result of caries of the bone there was a direct communication between the nasal cavity and the internal carotid artery.

The fourth case, the subject of the paper came under observation May 24, 1888. A young man, aged 28, fell a distance of twenty feet, striking the right side of head, rendering him unconscious for twenty-four hours. After the swelling had subsided the patient noticed diplopia, one image being higher and less distant than the other. There was also a loud beating sound in the right ear. Two weeks before coming under observation prominence of the eye was noticed. There was still diplopia, the higher image moving up and down with each heart-beat. Four days before coming under notice, the pain became intense. On examination there was at the inner extremity of the right brow a swelling which imparted a distinct thrill to the finger. There was also a harsh bruit. Pressure over the common carotid diminished the intensity of the thrill and lessened the pulsation.

It was decided to ligate the common carotid in the upper part of its course and this was done May 25th, two ligatures being applied and the vessel divided between them. The immediate effect was softening of the swelling, partial reposition of the eye-ball, great diminution in the pulsations and disappearance of the bruit. The patient made a good recovery and left the hospital with very little prominence of the ball: $V = \frac{2}{3}$; movements normal.

DR. CHAS. J. KIPP, of Newark, N. J., reported a case of

PULSATING EXOPHTHALMOS.

A lady 76 years of age presented herself with the history that shortly after striking the head in a fall, she noticed a noise in both ears, followed by protrusion of both eyeballs, the right four-tenths of an inch; the left, two-tenths of an inch. There was no marked pulsation, but there was a thrill and a bruit could be heard over the anterior half of the head. This could be arrested by compression of the right carotid and partially so by compression of the left carotid. In view of the age of the patient, no radical measures were recommended, but it was suggested that pressure be made on the right carotid as often as convenient. Iodide of potassium was also given. Three months later the patient stated that the noise had suddenly disappeared. This was followed by the disappearance of the exophthalmus first in the left eye, and subsequently in the right. The external appearance of the eyes is now normal. There is, however, a marked pulsation of the right subclavian artery, but no aneurism can be discovered.

DR. S. D. RISLEY, of Philadelphia: I would call the attention of the Society to the fact that Dr. Harlan reported a case of this kind cured by compression, and that I also reported a case in which compression of the vessel for a short time was followed by disappearance of the symptoms and subsidence of the exophthalmos.

DR. SWAN M. BURNETT, of Washington, read
AN ANALYSIS OF 576 CASES OF THE REFRACTION
OF HEALTHY HUMAN CORNEÆ, EXAMINED
WITH THE OPHTHALMOMETER OF
JAVAL AND SCHIOTZ.

These 576 corneæ belonged to 301 persons examined within a little over a year by Dr. Burnett. Pathological states of the cornea were excluded for consideration at another time. The corneal refraction was found to be the same in both eyes to within 0.25 D. in 110 persons. The horizontal meridian (to within 5°) was the least refractive (astigmatism according to the rule) in 420 eyes. The vertical meridian was the least refractive (astigmatism against the rule) in 20 eyes. In 88 eyes the meridians were oblique. In 58 eyes the difference in the refraction of the two meridians was less than .25 D. In 101 eyes there was *emmetropia*. The largest number has a corneal refraction of from 44 D. to 45 D.; the next largest from 43 D. to 44 D. The strongest corneal refraction was 47 D., the weakest 39 D. In 55 eyes there was *simple myopia*. The strongest refraction in the weakest meridian was 47.25 D.; the weakest 39 D. The corneal refraction did not in any considerable number of cases bear any close relation to the degree of the myopia. *Simple hypermetropia* was present in 59 eyes. Weakest refraction in the weakest meridian was 40.5 D.; the strongest 46 D. As in myopia, the cor-

neal refraction was no indication as to the degree of general hypermetropia. *Myopic astigmatism* was found in 140 eyes. In 4 eyes the general astigmatism was greater and in 11 it was less than the corneal. In 14 eyes the difference in the axes of the corneal membrane and that of the prescribed glasses was greater than 5°. *Hypermetropic astigmatism* was present in 96 eyes. In 4 eyes the corneal astigmatism was greater and in 2 eyes it was less than the general. The axes corresponded in all but 9 eyes. *Compound myopic astigmatism* existed in 63 eyes. In all but 7 eyes the corneal and general astigmatism corresponded, and in 44 eyes the axes corresponded. *Compound hypermetropic astigmatism* was found in 55 eyes. In 31 corneal and general astigmatic meridians corresponded. The corneal and general astigmatism was the same in all but 4 eyes. *Mixed astigmatism* was present in 8 eyes. In 4 the corneal and general astigmatism was the same; in 2 the corneal was less and in 1 greater than the general. Corneal and general astigmatic meridians were the same in 5 eyes.

In 42 eyes the general astigmatism was against the rule, while in only 18 of these eyes was the corneal astigmatism against the rule. From examinations made under a mydriatic the author felt himself warranted in thinking that many cases of lenticular astigmatism are due to an oblique position of the lens.

Corneal astigmatism is, with very few exceptions, according to the rule (vertical meridian the stronger). From a study of these statistics the author feels warranted in concluding that, while the corneal refraction gives no indication of the general refraction of the eye, its astigmatism, in the vast majority of cases, expresses the general astigmatism both as to degree and direction of its and considers, therefore, the instrument of Javal and Schiotz one of, if not the most important instrumental means for the diagnosis of the anomaly. He does not think astigmatism more productive of progressive myopia than any other form of ametropia.

DR. H. D. NOYES, of New York: In the immense majority of cases the evidences of the ophthalmometer without the use of atropine have corresponded with the evidences of the trial case. The amount of astigmatism and in a general way the axis of the astigmatism is obtained. The use of this instrument has led me to believe that mixed astigmatism is more common than we usually imagine. I have also noted the influence of the eyelids in altering the curvature of the cornea. I have also satisfied myself that the tension of the eye muscles modifies the curvature of the cornea. I have also noticed in some cases a pulsation of the corneal reflex, due to the fact that the cornea was so thin that the circulation of the eye impressed itself upon it.

DR. SAMUEL TIREBOLD, of Baltimore: I in-

fer that the author thinks that when a mydriatic is employed, the lenticular astigmatism is done away with. My experience leads me to believe that the asymmetrical condition in the lens does not at once disappear on paralysis of the ciliary muscle. I think that the discrepancy between the total and general astigmatism may often be accounted for by this persistent asymmetrical condition of the lens. This condition gradually disappears after suitable glasses are worn.

Progressive Hypermetropic Astigmatism was the title of a paper read by Dr. J. B. Emerson, of New York.

Dr. Edward Jackson, of Philadelphia, exhibited *A New Form of Cataract Knife*.

Dr. J. O. Tansley exhibited the following instruments:

1. *An Improved Lachrymal Syringe* in which the nozzle ends in a closed bulb, the openings being on the sides of the tube.

2. *A Clamp to prevent the passage of atropine solutions through the lachrymal duct into the nose* in cases in which the free use of atropine is called for.

3. *An Improved Lachrymal Probe, and Improved Stylus*.

Dr. Samuel Theobald exhibited *Probes made of Aluminium*.

DR. EDWARD JACKSON, of Philadelphia, read a paper on

CEDEMA OF THE CHOROID AND RETINA.

The author reported the case of a young man struck in the eye with a marble or a small stone, causing a bruise of the eyeball. The ophthalmoscope showed localized swellings of the choroid and retina at the posterior pole of the eye; the choroidal spots having the usual grouping of ruptures of the choroid in this region. These spots disappeared in about a week. There was also at first some 0.75 D. myopic astigmatism, which gradually diminished and in three weeks entirely disappeared, leaving the sight perfect.

DR. W. F. MITTENDORE, of New York, read a paper on

SYMPTOMATIC MYOPIA.

Three forms of myopia may be spoken of: axillary, refractive and symptomatic. The latter form may be caused by traumatism, but more commonly by diseased conditions. It may be produced by displacement of the lens forward. More frequently it is due to swelling of the lens accompanying beginning cataract. This is sometimes relieved by the use of concave glasses; very strong glasses being occasionally required. Plastic exudations may also cause myopia, but these usually so interfere with vision that it is impossible to demonstrate the existence of myopia. Glaucoma, serous choroiditis and iritis are frequently accompanied with myopia as a symptom. A number of illustrative cases were cited. In these

cases the myopia is not permanent, but as the disease disappears the myopia passes away, leaving the refractive condition of the eye the same as before the attack.

DR. CARL KOLLER, of Vienna: I think that in these cases of myopia in iritis the condition may be due to the irritation of the ciliary muscle. There is hyperæmia of the ciliary body and, as the irides are contracted, it is to be supposed that the ciliary muscle is also contracted. Although atropine may be used there is not full dilatation of the irides. It is, therefore, reasonable to suppose that the myopia is a result of spastic contraction due to inflammation.

DR. JOHN GREEN, of St. Louis: In two attacks of iritis of which I was myself the subject, I carefully studied this myopia. In my case the eyes were completely under the influence of atropia. The pupils were dilated and the ciliary muscle paralyzed.

EVENING SESSION.

DR. WILLIAM OLIVER MOORE, of New York, read a paper on

HYSTERICAL BLINDNESS IN THE MALE, WITH A REPORT OF THREE CASES.

Case 1.—Male, æt. 25, farmer, family history good. During past two years had suffered with nervous symptoms. Did not smoke or drink. In June, 1886, complained of failing vision in left eye. When seen June 16, according to patient's statement vision in left eye = 0; in right eye normal. Ophthalmoscope showed normal fundus except a slight patch of opaque nerve fibre near the papilla. Testing with prism and candle gave double vision, as did pressure on one eyeball. The patient was informed that treatment by electricity would cure him in a few days. A severe faradic current was applied, causing the patient to jump from his chair exclaiming there already was improvement. In ten days V. = $\frac{3}{8}$ emmetropic.

Case 2.—Male, æt. 22, student and farmer, fine-looking. History of insanity in the family. Eighteen months previous to coming under observation atropia had been instilled by a physician to determine whether or not glasses were required. He thought from the effect of the atropia that he was going blind. He then put on smoked glasses, subsequently bandages, and kept in a dark room. He would not open the lids and declared that he was blind. For ten months he kept in a dark room with covering over the eyes. On examination the lids were closed, but not by spasm; the cornea clear. V. = 0. Ophthalmoscopic examination under ether, normal fundus. Hysterical blindness was diagnosed and a favorable prognosis given. Canthoplasty was then performed. Coming from the ether the patient opened his eyes and evidently saw clearly. He was told that the cause of the disease had been discovered and that he would be well in a few days. In two days he

was walking around without glasses. Has remained well since.

Case 3.—Boy *æ*t. 15. Developed blindness in right eye after a disappointment at school. Normal appearance of eyes. Tests with prisms and colored glasses showed that vision was present. Ether was administered and patient assured that he would be well, and under electricity recovery was rapid.

DR. CHARLES A. OLIVER, of Philadelphia, read a

DESCRIPTION OF A SERIES OF TESTS FOR THE DETECTION AND DETERMINATION OF SUBNORMAL COLOR-PERCEPTION (COLOR-BLINDNESS) DESIGNED FOR USE IN RAILWAY SERVICE.

It is a well-known fact, both from theoretical and practical standpoints, that many "color-blinds," especially those of medium grades, have the power of differentiation even by daylight of the most difficult colors, when placed at ordinary metre distance, of wool selection employed in the detection and determination of "color-blindness." The writer has been induced through a hope to overcome the dangers that might arise from this power in situations such as railways, marine and naval service, where the safety of lives and the protection of property is often dependent upon proper recognition of color at great distances, and frequently through the intervention of more or less translucent media, to combine two modifications of his method of color selection to a simplified plan of the former procedure by which the candidate is placed in the actual position of after-work and under exactly similar circumstances as during employment. The method is divided into three parts:

First. The selection and registry of a definite number of loose wools from twenty-three pure and confusion match skeins thrown upon a dead black surface at 1 metre distance.

Second. The selection and registry of the same number of similar reflected colors under various intensities of diffuse daylight stimulus, placed at distances requisite for safety.

Third. The selection and registry of transmitted colors under various intensities of artificial light stimulus placed at distances requisite for safety.

In addition to the advantages shown to refer to the first test alone, the method has the following additional ones: 1. Much faster in time than any other method. 2. The selection of loose wools at a distance. 3. No necessity for an expert except in doubtful cases. 4. Employment of the same character of signal for testing as is used in daily routine. 5. Placing the eye during testing at a distance necessary for future safety. 6. Bringing the eye during testing directly before the true condition of weather experienced whilst

it is upon duty. 7. The test and match colors all graduated in proportionate sizes.

DR. CHARLES A. OLIVER also reported a

CASE OF EMBOLISM OF THE CENTRAL RETINAL ARTERY.

The patient, a young man, was seen October 5, 1887. Twenty-six hours previously, while slowly walking in the shade, he was suddenly seized with blindness in the left eye. There were no other symptoms, and there had been no previous illness. The right eye was normal. Ophthalmoscopic examination of left eye showed clear media; nerve substance of a gray tint, and swelling of the retina. All the retinal vessels were reduced in size. The veins were somewhat contracted, especially toward the nerve entrance. The characteristic cherry spot in the macular region was distinct. There was a small hæmorrhage out from the disc. Careful physical examination failed to reveal any lesion in other parts of the body. The case was kept under observation for some time, but there was no return of vision, the patient remaining completely blind in the left eye.

THURSDAY, JULY 19—SECOND DAY.

MORNING SESSION.

DR. SAMUEL THEOBALD reported

A CASE OF DOUBLE CONGENITAL IRIDEREMIA IN A CHILD WHOSE MOTHER EXHIBITED A CONGENITAL COLOBOMA OF EACH IRIS.

James O., *æ*t. 18 months, was seen December 9, 1887. His mother brought him on account of the red appearance which the pupils presented. Upon examination, besides a congenital squint of the left eye, complete absence of each iris was discovered. The lenses were clear and there seemed to be, at least in the right eye, fairly good vision. The interest of the case lies in the fact, accidentally discovered, that there existed in the mother a congenital coloboma of each iris. In her right eye the coloboma was large, its direction being directly upwards; in the left eye it was somewhat smaller and was in an upward and outward direction. In neither eye was the choroid involved in the congenital defect. The mother volunteered the statement that an older child had had a similar appearance of the eyes, so that it is probable that to this mother with congenital coloboma there were born not only one, but two children with absence of the irides.

DR. T. V. SUTPHEN, of Newark, N. J., read a paper on

PUNCTURE OF THE RETINA FOR DETACHMENT.

The results of three operations were reported. A male 62 years of age sought treatment April 1, 1887, for a cloudy appearance before the right eye. This he had noticed only a few days. He was

near-sighted but had never used glasses. Examination R. S. = $\frac{1}{10}$, raised to $\frac{1}{20}$ by $-\frac{1}{8}$. Field of vision defective downwards and towards the median line; tension slightly diminished. L. S. = $\frac{1}{10}$, raised to $\frac{1}{15}$ + by $-\frac{1}{8}$. Ophthalmoscope showed myopia with choroiditis in both eyes. In the right eye the retina was found detached in its upper and temporal portion. The patient refused to undergo vigorous treatment in bed. He was given iodide of potassium in gradually increasing doses, rest being enjoined.

Five months later the patient returned with commencing detachment in the upper and temporal portion of the left retina. He was then kept in bed for two weeks with the eyes bandaged, while profuse diaphoresis was frequently induced, but without benefit. He was then sent to the country, the iodide being continued. By December 1 there was in the right eye only perception of light; in the left there was vision confined to the outer and lower field. On this date puncture of the retina from beneath the detachment was made. Thorough antiseptics was employed; cocaine was instilled. A sickle-shaped needle was thrust into the globe between the insertion of the external and inferior recti muscles, on the equator and on a plane with the lens, it was pushed onward until it was thought that the retina had been pierced. It was then withdrawn with a sweeping motion, the object being to enlarge the opening in the retina. Atropine was instilled, the eyes bandaged, and the patient ordered to keep quiet. The following day the subretinal fluid had disappeared, field of vision was normal, a red reflex was obtained from the fundus in every direction and the patient could distinguish large objects. Bandage was reapplied. Two days later patient could count fingers at twelve feet, the retina appeared in its normal position, but the vitreous was quite cloudy. The vision continued steadily to improve. December 10 a similar operation was performed on the left c. e. Two days later there was marked enlargement of the field of vision, but some detachment was still to be seen on the temporal side. December 16, field of vision in both eyes normal, no detachment of retina in either. The patient remained in bed twenty-eight days. February 10, detachment began to reappear in the left eye, and by March 3 it was as great as before. Needling was again performed with the escape of very little subretinal fluid. March 5, field again normal. April 1, partial return of detachment in left eye. July 6, seven months after first operation, S. R. = $\frac{1}{10}$, raised to $\frac{1}{40}$ by $-\frac{1}{2}$; no return of detachment, field of vision normal, blindness for red. In the left eye almost complete detachment of the retina.

After referring to the history of the operation, the speaker said that the interesting facts were these: The apparently perfect safety of the operation under modern antiseptics; one success and

two failures under exactly similar conditions, barring the escape of the fluid outwards in the successful case; encouragement to try this operation in otherwise incurable cases; the absolute freedom from all reaction. The best results will probably follow when the operation follows closely upon the subsidence of the acute affection causing the detachment. The chances of success are increased by a free flow of fluid outwards. It was suggested that a narrow Graefe knife might be used after accurately measuring the depth of the detachment, provided the point be so directed that the wound in the retina shall be directly opposite the scleral puncture.

DR. J. F. NOYES, of Detroit: I have tried operative procedure in only one case. I drew off the fluid with a hypodermic syringe. After drawing off the fluid the retina returned to its normal position and the outline of a small tumor was discovered. The detachment soon returned and the ball was enucleated one year later.

DR. F. P. CAPRON, of Providence, reported

A CASE OF GLIOMA.

The patient was a child $3\frac{1}{2}$ years of age. The growth was removed, but has since involved the submaxillary glands and the glands in the neighborhood of the ear.

DR. DAVID WEBSTER, of New York: There is now on record a case in which Dr. C. R. Agnew removed both eyes of a child 1 year of age for glioma. This was fifteen years ago and the individual is still living. In this case the diagnosis was verified by microscopical examination. In some cases where the diagnosis was made and enucleation refused the patients are still alive and the disease has not progressed, retrograde metamorphosis having, it is said, taken place.

THE PRESIDENT, DR. W. F. NORRIS: My impression is that in true glioma, retrogressive metamorphosis does not take place. Fatty degeneration may occur in parts of the growth, but I am not aware of a case in which the growth entirely disappeared. Such cases are, I think, instances of mistaken diagnoses. The diagnosis is difficult unless the growth has reached such a size that the vessels may be seen in it.

DR. SWAN M. BURNETT, showed

MODELS EXHIBITING REFRACTION BY CYLINDERS.

It was shown how the refraction and focal line change with the variation in the strength of the lens and with the alterations of the angle of crossing of their axes.

DR. B. ALEX. RANDALL, of Philadelphia, exhibited some drawings showing *Anomalous Outgrowths upon the Optic Disk*, and also drawings of *Anomalies of the Retinal Vessels*.

DR. EDWARD JACKSON proposed a

DESIGNATION OF PRISMS BY THEIR REFRACTIVE POWER.

The author pointed out the inconveniences and

errors arising under the present method of designating the strength of prisms and recommended their designation by their refractive power as much more accurate.

A committee, consisting of Dr. H. D. Noyes, Dr. Edward Jackson and Dr. Swan M. Burnett, was appointed to take the matter into consideration and report at the next meeting.

DR. DAVID WEBSTER, of New York, reported a case of

EXTRACTION OF A PARTIALLY ABSORBED
CALCAREOUS LENS.

March 15, 1888, C. C., æt. 23, consulted Dr. Agnew and the author at the Manhattan Eye and Ear Hospital. She had phthisis bulbi, left, and in the right eye were the calcified remains of a motley absorbed lens, with a discolored atrophic looking iris attached to the membranous mass by numerous adhesions. Visual field good. $V. =$ fingers at two feet. The vision of left eye had been lost through a blow with a whip at the age of 2 years. A catarrh developed in the right eye some time afterwards. Seven years ago (1881), her sight having been lost four months, both eyes were operated on, by a surgeon in another city, several times. Violent inflammation followed one or more operations on each of the eyes. Eighteen months ago another needling was done by another surgeon, by which sight was somewhat improved. The atrophic eye of late has been painful and tender on pressure.

March 16.—Dr. Agnew enucleated the atrophic eye-ball. A calcific plate was found in the choroid and a small calcareous lens. While the patient was still under ether, he did an iridectomy on the right eye.

April 27.—Dr. Webster divided with Knapp's knife-needle two or three of the adhesions which were on the stretch. At least one could be heard to snap when cut. An attempt to penetrate the thinnest looking portion of the membranous mass failed. There was considerable effusion of blood which was soon absorbed.

May 14.—An attempt to remove the papillary obstruction with a sharp hook failed. Very little reaction.

June 6.—With a keratome bent on the flat, a wound was made as for iridectomy on the superior nasal corneal border. The papillary obstruction was drawn out and cut off close to the cornea. Not a drop of vitreous escaped. There was some pain in the eye for three or four hours, probably the reaction from cocaine. Four days later pain again appeared and was relieved by iced cloths.

June 18.—Fundus normal. No floating bodies in the vitreous, but the remaining portion of the papillary membrane which, by the way, was very thick, and so tough that the iris scissors would scarcely cut it, extends backwards horizontally and flops up and down with the movements of the eye.

June 22.— $V. = \frac{20}{20}$ with $-\frac{1}{8}x$. Reads Jaeger No. 1 with $\frac{1}{25} + \frac{1}{25}$.

June 26.—Discharged, wearing the above spectacles.

The following were elected

OFFICERS FOR THE ENSUING YEAR:

President—Dr. Wm. F. Norris, Philadelphia.

Vice-President—Dr. Hasket Derby, Boston.

Corresponding Secretary—Dr. J. S. Prout, Brooklyn.

Recording Secretary—Dr. Samuel B. St. John, Hartford.

It was decided to hold a special meeting for the consideration of scientific matters only, Sept. 19, 1888, at the Arlington Hotel, Washington, D. C.

The regular meeting will be held the third Wednesday in July, 1889, at the Pequot House, New London, Conn.

Adjourned.

Philadelphia County Medical Society.

Stated Meeting, May, 23, 1888.

THE PRESIDENT, J. SOLIS COHEN, M.D.,
IN THE CHAIR.

DR. JOSEPH O'DWYER, of New York, read a paper on the use of

INTUBATION TUBES.

[Before reading his paper Dr. O'Dwyer exhibited tubes with a metallic attachment to replace the epiglottis in swallowing, one of them being so arranged with a spring that the finger might be introduced behind it as extractor. In order to illustrate through how small a space breathing can occur, he exhibited a specimen from a case in which there had been no choking of voice or other sign of laryngeal involvement. Many fear that the tube will slip through into the trachea. A tube was exhibited *in situ*, in a 3-year old larynx, showing that this accident cannot occur if the proper size of tube for the age be employed.]

The testimony of tracheotomists from the time of Bretonneau, has been uniformly in favor of canulas of large calibre. I will refer to a few of the authorities on this subject before giving the reasons that led to the adoption of laryngeal tubes of so much smaller calibre than those generally used in the trachea.

If a large opening be preferable in one situation it certainly is in the other, the same arguments applying to both. Bretonneau for some reason that I have not been able to find, came to the conclusion that the canulas which he first devised were not large enough, and laid down the rule that: "The artificial conduit should always have at least the normal diameter of the

glottis of the subject." Trousseau endorsed this as an excellent precept, which should never be forgotten. Steiner says that as large a canula as possible should be used.

The first point of importance insisted on by West, as influencing the result of tracheotomy in croup, is the use of a large canula. The author of the article on croup in Holmes's *System of Surgery* says that :

"As a general rule, both openings in the canula should be sufficiently large to admit as much air as would pass through the rima glottidis in health.

The following is from Reynolds's *System of Medicine* : "No tube with less than a quarter of an inch in diameter is sufficient to carry on respiration. At a year old such a tube cannot be introduced into the trachea ; it would not be tolerated at 2 years old, so that at these ages some other means must be looked for to secure a passage for the air." This author then discusses the question as to whether the want of success with tracheotomy in very young children is not due to the inability to secure a large enough opening.

In answer to such assertions as the above, it is only necessary to state that the diameter of the lumen of the trachea at a year old is scarcely a quarter of an inch, and, furthermore, an adult can breath comfortably while at rest through an opening of this size. I have at present a man under my care who has been wearing a canula in the trachea for the last seven months, the bore of the inner tube being exactly one-fourth of an inch in diameter. During part of this time he was obliged to breathe exclusively through the artificial opening, but then the least exertion, such as walking across the room, was sufficient to induce dyspnoea. Nature supplied this patient, who is of large stature, with a breathing tube at least seven-eighths of an inch in diameter, and the surgeon substituted one having a breathing capacity of something less than one-twelfth of this. In other words, the area of a cylinder seven-eighths of an inch in diameter is a little more than twelve times that of one a quarter of an inch in diameter.

I have found that in the adult the diameter of the lower division of the larynx is from one-eighth to three-sixteenths of an inch less than that of the trachea, which reduces the breathing capacity about one-third. I have not made any similar measurements in children, but by comparing a section from the cricoid cartilage placed beside one from the trachea, it does not appear that the area of the former is more than one-half that of the latter ; in other words, the disparity is greater in children than in adults. In the preceding calculations I estimated on the size of the trachea, simply because it was more convenient, but it is evident that in order to arrive at correct conclusions, we must compare the lumen of the

canula with that of the infraglottic division of the larynx, because the trachea would conduct air to and from the lungs just as well were it no larger than its mouth. But, as I have already stated, it was not from any such comparisons with the normal calibre of the larynx that the tubes have reached their present dimensions, but from noting the results of pressure on the intensely inflamed and infiltrated tissues as found post-mortem.

After an experience with tubes of various sizes in over two hundred cases of croup, besides other forms of stenosis in children, I am fully convinced that, as at present constructed, they afford ample room for carrying on the respiratory function in the most perfect manner. When the disease is confined to the larynx and upper portion of the trachea, it is not an uncommon experience after the paroxysm of coughing that immediately succeeds intubation has subsided, to find the little patient breathing so quietly and imperceptibly that it is sometimes difficult to convince the mother, who has returned to the room after an absence of fifteen or twenty minutes, that her child is still living. Such complete freedom of respiration would be impossible were the opening too small. When the struggle for breath has continued long enough to produce extreme exhaustion, together with more or less atelectasis and congestion of the lungs, this perfect relief does not occur. The same is true after the partial asphyxia induced by prolonged or repeated attempts to insert the tube. Such cases sometimes never rally, although air enters the lungs in the freest possible manner. If any dyspnoea whatever remain for any considerable time after intubation, or if the respiration be much above the normal in frequency, it indicates the presence of some complication or extension of the disease below the tube. The fact that several times on removing a tube from the larynx I have found its calibre considerably reduced by firmly adherent secretions, when there had been no dyspnoea to indicate it, is good evidence that there is more room than is actually required for the free entrance and exit of air.

Physiology teaches us that the muscular system is the great consumer of oxygen, and that when this system is at rest the consumption of oxygen is reduced to a minimum. It has been estimated that as much oxygen is consumed during one hour of active exercise as would suffice for four hours in a state of repose, with food, and for six hours without food. On purely physiological grounds, therefore, if only one-fourth or one-sixth of the amount of air is required in a state of rest, a canula bearing this proportion to the normal lumen of the air passages should afford ample room for the perfect performance of the respiratory function without the least effort whatever. There would be no point in trying to determine through

just how small a fraction of the normal lumen of the air-passages it is possible to carry on respiration effectually, if the only object to be accomplished by the artificial channel were to allow the free passage of air to and from the lungs. There would then be no room for argument, as there could be no objection to having the canula many times larger than necessary for this purpose, for such exists in the normal condition. I will add further, that were there no abnormal secretions to be gotten rid of, there would still be no reason for difference of opinion on this question.

The only ground left for argument, therefore, is the manner in which the machinery concerned in the removal of secretions is modified or injured by a canula in the larynx or trachea.

The mechanism of coughing, as I understand it, is simply getting as much air into the lungs as possible, condensing it, and allowing it to escape suddenly, on the same principle as the air-gun. To accomplish this, the glottis is firmly closed, coincidently with spasmodic contraction of the expiratory muscles, until the imprisoned air is sufficiently compressed, not only to give it power to project any offending substance before it like the ball from an air-gun, but also to increase the friction between it and the lining membrane of the air-passages to such a degree as to scrape off, so to speak, secretions that may be adherent. Considerable condensation, with great velocity of the expired air are, therefore, necessary to give the maximum expulsive power. The latter without the former would accomplish nothing, because the same volume of air can be driven through the open or half-open glottis just as rapidly as in the act of coughing, without the least power to remove a particle of mucus even from the larynx, much less from the bronchial tubes. This can be demonstrated by trying to cough while retaining the vocal cords in the expiratory position—the lack of power resulting solely from inability to compress the air to any appreciable extent.

Coughing through a canula is identical with this act when performed with a partially open glottis, and the only means left of subjecting the air to any condensation whatever is the much shorter time occupied in expelling it through the same space by which it more slowly entered. An excellent and forcible illustration of this argument, and one the mechanism of which is identical with that of coughing, is the familiar act of blowing the nose. There is little or no ability to remove secretions from this organ without first reducing the nostrils to a small fraction of their normal calibre, or by momentarily producing complete occlusion, as in closing the glottis, until the air is sufficiently condensed to force the secretions out with it. Very little power can be developed even by closing one nostril and forcing all the air through the other, if normally patu-

lous. If secretions can be removed more effectually from the air-passages through a canula of the dimensions advocated by the authorities already quoted, for the same reason it should be easier to remove accumulations from the nose without compressing the nostrils. I claim, therefore, that while the artificial opening must be large enough for the perfect performance of the respiratory function, the power to expectorate is still further diminished, and in exact proportion to its increase beyond this limit.

DR. CARL SEILER: I see that Dr. O'Dwyer has added an artificial epiglottis to the tube. It has been the experience of all laryngologists to meet with cases of complete or almost complete destruction of the epiglottis by syphilitic or other ulceration, in which there has been no difficulty of deglutition at all. Therefore, I long ago came to the conclusion that it is not the epiglottis which protects the larynx, but the apposition of the ventricular bands. And I would suggest, though I have no experience with such a device, that if the tubes were so made that the head could slip into the ventricles of Morgagni without interfering with the ventricular bands, there would be no difficulty in deglutition experienced. It is not only in New York, but also in this city that the only operation for opening up the air passages that parents will consent to is intubation. I recall a very distressing case in an asylum, in which the matron would not consent to tracheotomy until the mother of the child had been communicated with, and while they were hunting the mother the child choked to death. This was before we knew of intubation. That we might have performed at once.

DR. H. R. WHARTON: As to the calibre of the tubes, the fact that children do breathe well with tubes as now made is sufficient evidence of the correctness of Dr. O'Dwyer's position. Since my experience of this, I am not so anxious as formerly to get in the largest tracheotomy tubes.

DR. E. E. MONTGOMERY: Since August, 1886, I have performed some thirty or forty intubations, having previously done some twenty-eight tracheotomies. Fifty per cent. of the children intubated have recovered. My experience is that this operation largely reduces the necessity for tracheotomy, and I believe that if intubation were done early in every case, tracheotomy would rarely be necessary. I cannot refrain from saying that I feel that in devising and perfecting his operation, Dr. O'Dwyer has been a benefactor to the medical profession and to the human race.

DR. SHIMWELL: I have performed intubation sixteen times with seven recoveries. In all there has been immediate relief to respiration. In one case I had to remove the tube twice, and introduce it three times, and perform artificial respiration. In removing the tube post-mortem, I have found it impossible to drag it down through the trachea, so there is no danger of slipping. Is not

the occurrence of substernal respiration-depression rather too late an indication to wait for?

THE PRESIDENT: I am glad to thank Dr. O'Dwyer for his lucid exposition founded on fact, and proved by actual exhibition of specimens, that the small calibre of his intubation tube is amply sufficient for due respiration. My own experience with tracheotomy has led me to favor large tubes, the largest that can be introduced without touching the walls of the trachea. I still believe that I have seen life saved by taking out small tubes and substituting larger ones. And I confess that the small calibre of the tube used was one of the theoretical considerations which I enumerated among the drawbacks to intubation. But facts are stronger than theories, and as the small calibre intubation tube does seem to give air enough, and as enough is all that is wanted, I am quite ready to profess my satisfaction with its present calibre. I must ask Dr. O'Dwyer to make clear to us the question as to the impaction of membrane. This is not a mere theoretical objection, but is borne out by experience. Perhaps I have been led to attach an undue importance to the matter by an accident which occurred to me a year or so before Dr. O'Dwyer read his now historical paper before the International Medical Congress at London in 1881. I had been called to a case of membranous laryngitis, and had proposed tracheotomy, which had been declined. As I turned to leave the room the mother called piteously, "Oh, doctor, don't leave my child without trying to do something for it." I said to my assistant, "We will try to save this child," and taking a catheter I cut off the end, and passed the instrument into the larynx. The child instantly became black in the face, and there was nothing for it but, without asking any questions, to plunge my knife into the trachea as the child lay on its mother's lap. I inserted the same catheter through the orifice deep into the trachea, and then we performed artificial respiration, my assistant inflating the child's lungs through the tube with his own breath, and my hands exercising compression of the thorax in respiratory rhythm; and, after a while, we had the satisfaction of leaving the rescued child sleeping peacefully with unobstructed respiration. But I confess that this experience cost me some of the most anxious moments of my life, and has left a fear of the danger of crowding down membrane in front of a tube introduced into the larynx which may, perhaps, make me over-anxious.

DR. O'DWYER: Pushing down of membrane does occur, though rarely. The difference between the liability to the accident in catheterization and intubation is that the catheter has an open, comparatively broad end, while the intubation tubes are comparatively probe-pointed. One pushes and catches the membrane, the other slides past it. I have crowded membrane down in only two cases

out of two hundred sufficiently to produce asphyxia. In those two, on removal of the tube, the cast was coughed out.

If we take away the tube because the child is breathing badly and the trachea is full of membrane, the child not having the strength to cough it out, the child chokes from the absence of the tube, not from its previous presence. My attention is now being directed to devising a means to get rid of the membrane. I hope to present something practical before long.

Blocking with membrane while the tube is in may occur. Formerly, when the swell of the tube was not so great, it would be coughed out, but now it is not coughed out and suffocation may take place. The original tube was better in this regard.

The earlier tubes were made to fit into the ventricles with the idea of permitting the approximation of the ventricular bands, but it did not work. It is true that the epiglottis is merely an accessory, but in an intubation case, the ventricular bands being held open, we have to depend upon it; and that is the reason, the dependence being a poor one, that solids and semi-solids which can go down in mass are better than liquids.

DOMESTIC CORRESPONDENCE.

A Few Drops at a Dose.

Dear Sir:—Your editorial headed "About the Size of a Beau," in THE JOURNAL for May 26, is very timely and to the point.

Manufacturers of patent and proprietary remedies, as well as the druggists, are also guilty of using very indefinite directions for the administration and preparation of medicines. The label for one of the popular cough preparations states that the dose is a "few drops." Now who knows how many make a few? If the patient has just been taking tincture of iron in five-drop doses then two or three would be considered a "few," but if some mixture has been previously administered in forty or fifty-drop doses a "few" might be construed to mean twenty or thirty drops. Another manufacturer of remedies for the cure of all human ills instructs his patrons to take a teaspoonful "several times a day." Previous experience may cause one person to consider three to be "several" while others may take twenty doses a day. These cases of carelessness on the part of manufacturers might be multiplied, but they are sufficient to illustrate the point. Practicing physicians should bear this state of affairs in mind when called to see patients that make a drug store of their stomach.

The retail druggist is also sometimes guilty of giving careless directions. Customers sometimes

ask for information about doses, or how to prepare decoctions, infusions, poultices, etc. I have heard such indefinite measures as a "handful," "pinch," "a little," "swallow," "gulp," "sip," "mouthful," "bowlful," "small quantity," etc., used in imparting such knowledge. Our drops, teaspoons, dessert-spoons, table-spoons, teacups, tumblers, wine-glasses, etc., vary sufficiently to cause trouble without making use of such vague terms as I have mentioned.

H. M. WHELPLEY.

St. Louis, Mo.

Tympanitis and Tympanites.

Dear Sir:—Your late reference to the frequent use of the word tympanitis for tympanites, suggested a few reflections on the subject of careless expressions by medical writers. It seems to me, however, that you have been unfortunate in the one example which you have selected for animadversion. Whenever I have seen one of the spellings in question, where the other ought to have been used, I have regarded it as a typographical error which had escaped the proof-reader. But suppose, for example, the misspelling to have been in the copy, should not the compositor have corrected it? If, however, he failed to do so, was it not the duty of your proof-reader to preserve THE JOURNAL from such a blemish? Some pretty well educated doctors are careless writers. Is it customary for the better journals to reproduce all their accidental faults?

If 'twere possible always to regard the error as a fault of the printer I would not trouble you with this note. How often do we see the terms vaccinate and inoculate used as if they were synonymous. In records of cases we meet every day with the expression "the pain disappeared." Of course it is too much to expect of the publisher that he should correct all the defects of a radically bad composition, but when, as in the instance to which you refer, it is the use of an *i* instead of an *e*, the profession will hold him responsible.

Sincerely,

[We selected the misuse of tympanitis for tympanites for animadversion because it is frequent, both in authors' mss. and in medical literature, and because in one case after the correction had been made the author changed it in his corrected proof. It is the editor's, not the compositor's or proof-reader's, duty to correct misspelling of technical words, and this should be done before the mss. is given to the compositor.]

Medical men are very jealous of having their mss. corrected or changed in any way, and frequently complain of changes, even when they are made in the interests of grammar and common sense.

What is the objection to the expression, "the pain disappeared?" One of the meanings of "to disappear" is "to cease to be or to exist."

While on this subject, we beg to call our correspondent's attention to some words and expressions in his communication. "... in the one example which you have selected," should read "in the one example that you have selected," if a relative word be used at all. "... where the other ought to have been used," should read "where the other should have been used." *Ought* implies moral obligation.—EDITOR.]

MISCELLANEOUS.

TEACHING IN THE LONDON HOSPITALS.—Dr. George J. Preston, of Baltimore, writes to the *Maryland Medical Journal*: The Continental schools have held out so many and varied attractions to the student of medicine, and the prevailing fashion has set so steadily in that direction, that comparatively few Americans are found in the hospitals of London. This is to be regretted for several reasons, the most important being, that we in America are in need of the painstaking, thorough, clinical work that is so characteristic here. Then, too, no time is lost in becoming accustomed to a foreign language, as on the Continent. Of course there are disadvantages. There are very few private classes or courses given here, and the foreign student is not given the prominence that is awarded him in Vienna, for example. The teaching is intended, as it should be, for the English student. I have heard of some complaints from German students, that more attention is shown to foreigners in many of their Universities, than to their own men. On the other hand nothing could exceed the courtesy that is extended to a visitor in the London Hospitals. Everything is open to him, and he is free to attend any clinic or lecture he wishes to avail himself of. The thing that impresses one most in regard to the work here, is the minuteness with which the clinical examinations are made. The teaching is done not by lectures, or, at least, very little in this way, but in the wards. The students are taught to take the histories of the cases, and the chief carefully goes over each case, pointing out characteristics and peculiarities, and directing the examinations which each student makes for himself. My attention has been directed chiefly to neurology, for which London offers special advantages, both in the amount of material and the eminent specialists. At the National Hospital for Paralysis and Epilepsy, there are from 250 to 300 beds, and very large out-patient departments. It is the centre for this special work, and is admirably fitted to carry it on. Dr. Gowers, whose recent book is in most respects the best systematic work on nervous diseases that has appeared, holds a very large out-patient clinic every Monday at the National, and his well-earned reputation has attracted students of nearly all nationalities to him. This clinic lasts from two to three hours, in the course of which almost the whole field of neurology is illustrated. The work is mostly diagnostic and physiological; treatment has not a very prominent place, except an outline of it, nor is pathology made as much of as in many of the clinics in America. This fact has impressed me also in the clinics in general medicine. One does not hear very much about pathology, except in the lecture on that special subject, or in the dead house. The clinical teaching is essentially diagnostic.

ORIGINAL WORK AT THE THOMAS WILSON SANITARIUM.—The noble work of this Institution among the children of the poor has been resumed during the present summer with renewed vigor. As many as ninety sick children, most of them ill with summer complaint, are taken early each morning, free of charge, to the San-

tarium, and brought back to the city late in the afternoon. At the Sanitarium simple food is provided freely for all, and the mothers and children spend the day in its pleasant halls and grounds. Those who go for the day, only, take with them their own medicines, and special caution is used that the directions of their family physicians shall not, except in emergency, be interfered with.

The subject of greatest interest is the treatment of those children who are allowed to remain for several days or weeks in the cottages, under the care of the physician in charge, Dr. Booker, and of the resident lady physicians. Two of these cottages contain twelve rooms, each with a bed and a cot, for mothers who can remain with their children; the third has a nursery of eight cots, in which children may be left, in charge of two competent nurses, by mothers who must go to the city, and who are furnished with tickets so that they may return to the sanitarium whenever they wish. Severe cases of summer complaint are benefited only by several days stay in the country. The treatment of the cottage children is very simple and worthy of adoption in private practice. In acute diarrhoea with vomiting of milk, the child is at once taken from the breast or bottle, and no food except beef tea is given to it for twenty-four hours. Small doses of calomel—1-12 to 1-6 grain—are administered hourly for a day or two, to quiet the stomach and to excite the secretion of the liver. At the end of twenty-four hours, *sterilized milk* is given. If the vomiting returns the milk is stopped and beef tea is resumed for twenty-four hours, when milk is once more given.

No artificial foods are used in the Sanitarium. Irrigation of the lower bowel is practiced two or three times a day, if it does good. In chronic cases resorcin grs. ij with tr. opii deodorata gtt. 12 is given every two or four hours. When vomiting proceeds from nervousness, sodii bromidi grs. ij and chloral hydrate gr. j are administered every two or four hours to a child of six months. This same prescription is used for sleeplessness. As a rule no further medication is needed.

Dr. Booker considers the *sterilization of the milk* a great improvement, likely to do away with wet-nursing and artificial foods. Milk as it flows from the breast is free from microscopic germs. Between the time when the cow's milk leaves the rubber and the time when the baby drinks it various minute organisms may fall into it, which, either before or after the child takes it, produce changes in the milk which cause disorder of the digestive organs of the child.

By *sterilization* we either destroy these organisms or check their growth. The apparatus for sterilization is a covered tin bucket ten inches in height by eight in diameter and a wire basket made by Dufur & Co., of Baltimore, large enough to hold six or eight nursing bottles. In the bucket filled to the depth of one inch with hydrant water, is placed the wire basket with the nursing bottles, each of them containing a suitable amount of milk and stopped with a wad of cotton batting. The bucket is then covered and placed on a gas stove, and the water is boiled for half an hour, the milk, bottles and stoppers becoming sterilized by the heat. After cooling the basket of bottles is kept in a cool place, and one by one, as needed, the bottles are removed, the stoppers taken out, and a disinfected nipple is attached for nursing. Milk enough to supply one baby for twelve hours is thus prepared at once, and if kept in a cool place—even without ice—it will remain sweet and wholesome until used. The whole apparatus, including bottles, costs a little more than a dollar.

It is stated by Dr. Booker that when the infant's bowels have once been cleared of ill-digested milk by change to beef tea and by irrigation, the use of sterilized cow's milk properly diluted is followed immediately by great improvement in the health of the infant, as great as when it returns to the breast of its mother.

For irrigation of the bowels a fountain syringe full of tepid hydrant water is connected with a soft rubber

catheter about fourteen inches long, and this catheter, oiled, is passed gently to its full length into the rectum and descending colon, the water—a gallon or more—being allowed to follow into the bowel and out again by the side of the catheter. This irrigation is painless and often aids greatly in recovery, especially in severe cases resembling cholera infantum.—*Maryland Medical Journal*, July 14, 1888.

THE METHOD OF DISINFECTION PRACTICED AT THE QUARANTINE BELOW NEW ORLEANS.—No scientific report published by the Government this year has been more important than that just made by Dr. J. J. Kinyown, assistant surgeon in the Marine Hospital Service (*Weekly Abstract*, June 29), upon the germicidal powers of the different methods of disinfection practiced under the direction of the Louisiana Board of Health at the quarantine station below New Orleans. The report is important, not only because it shows the degree of protection against the importation of infectious diseases through the important port of New Orleans, but also, since the methods of disinfection practiced at other quarantine stations are similar to those in use there, the experiments show approximately the efficacy of each mode of disinfection, and suggest changes that should be made in their use.

The three methods of disinfection tested were: the use of bichloride of mercury solution, the application of dry and moist heat and fumigation with sulphur dioxide.

Dr. Kinyown finds the first of these methods defective, because of the difficulty of getting the disinfecting agent into cracks and corners, rubber goods, the under sides of decks, and into lockers, etc. He discovered in all these localities and articles that the microorganisms existing before the disinfection had not been destroyed, and he found them as plentiful on the floor of the fore-castle of one ship, that was exceptionally filthy, after it had been drenched with bichloride of mercury for an hour, as before. Dr. Kinyown recommends that, in order to make this mode of disinfection more effectual, the bichloride of mercury be applied with a spray produced by connection with a steam-boiler, and that it be applied after fumigation by sulphur.

The results from the application of dry and moist heat were the most satisfactory of all. Cultivations of various disease-germs exposed to a dry heat of 176° F., and afterward to steam at a temperature of 212° F., were, with few exceptions, destroyed. Dr. Kinyown thinks that, in order to secure absolute protection, the heat should be made greater and the time of exposure increased.

In eleven experiments seventy-four disease-germs were placed in vessels among articles to be disinfected by the use of sulphur dioxide, but only sixteen of the whole were destroyed, or less than 22 per cent. Dr. Kinyown has very little to say about this method of alleged disinfection, except to recommend that the sulphurous fumes be applied in large quantities, and be confined in the compartments to be disinfected a longer time. But he reports his experiments in full, and lets them speak for themselves.

The net result of these tests is to show that some disease-germs escape even when the most effectual modes of disinfection practiced at quarantine below New Orleans are resorted to, and that less than one-fourth of them are killed when the least effective method is used. We assume that the quarantine and city health officers everywhere will profit by the suggestions of this report, and that the public will be better protected in the future than in the past.—*Science*, July 13, 1888.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—The Committee of Arrangements takes pleasure in announcing to the members and invited guests of the special societies taking part in the Congress that the arrangements are sufficiently advanced to assure the success of the First Triennial Session of the Congress of American

Physicians and Surgeons, which will be held in the city of Washington, during the 18th, 19th, and 20th of September next.

A number of distinguished physicians and surgeons have signified their acceptance of the invitation to attend, among whom may be named Sir Spencer Wells, Sir Andrew Clark, Sir William McCormac, Drs. W. O. Priestly, William Ord, and Grainger Stewart, Mr. Lawson Tait, Mr. Victor Horsley, Mr. Thomas Bryant, Mr. Thomas Annandale, Professors Ferrier, Esmarch, and Gerhardt, Drs. Rafael Lavista, of Mexico; J. L. Reverdin, of Geneva; O. W. Holmes and H. J. Bowditch, of Boston; Joseph Leidy, of Philadelphia; W. Kingston and Eccles, of Canada.

The meetings of the Congress will be held during the evenings, beginning at 8 o'clock, P.M.; on the evenings of the 18th and 19th the meetings will be held in the main hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, and on the last (Thursday evening) in the hall of the National Museum. During this evening the Army Medical Museum and Library building, along side of the Museum building, will be lighted and opened for the inspection of the members and invited guests. The meetings of the societies will be held during the day, according to the programme each may respectively provide. The sessions will be open to the profession.

On Monday evening, September 17, a dinner will be given by members of the Congress to the guests of participating societies. Invitations to this dinner will be sent only to the specially invited guests who have indicated their acceptance. The contributing members will receive cards of admission. It will be limited exclusively to members of the Congress and invited guests. An informal collation will be served at Willard's Hotel on Tuesday evening, after the adjournment of the meeting of the Congress, to the guests and those members who may choose to attend. A similar entertainment will be served in the National Museum building on Thursday night, after the final adjournment of the Congress.

Guests are requested to notify the Chairman immediately after their arrival in Washington, giving their address and stating whether they have ladies with them. Special arrangements will be made for the entertainment of the wives and daughters of the guests. Hotel accommodations are ample, and conveniently located to the places of meeting.

The Secretaries of the special societies are requested to forward to the Chairman the names and addresses of their foreign guests.

Members of the Congress and the guests are expected to register. A parlor in Willard's Hotel will be provided for that purpose, from which the mail of the members and guests will be distributed, and at which the city residence of each member or guest can be ascertained. All communications should be addressed to the Chairman of the Committee.

SAMUEL C. BUSEY, M.D.

Chairman Committee of Arrangements.

1545 I St. N. W., Washington City.

RECORD AND CLASSIFICATION OF CONTINUED AND REMITTENT FEVERS.—*To Medical Officers and Acting Assistant Surgeons, U. S. Marine Hospital Service.*—With a view of formulating a more precise symptomatology of the "continued" and "remittent" fevers; from and after July 1, 1888, you are directed to take full and accurate notes of all cases of "continued" and "remittent" fevers treated by you among patients of the Marine Hospital Service, and to make special semi-annual reports of all such cases to this office.

The cases of fever should be classified, as far as practicable, according to the symptoms in each case, into simple continued, enteric, remittent, etc., and every symptom noted.

The presence or absence of the following symptoms relative to enteric fever should be carefully noted, together with the dates of their respective appearance:

Eruption; Diarrhœa; Tympanites; Intestinal Hæmorrhage; Perforation of Intestines; Peritonitis; Necropsy; Temperature Range; Enlargement of Spleen; Delirium (character); Mode of Onset (gradual or sudden); Presence or Absence of Initial Chill; Presence or Absence of Intestinal Lesions, and, if present, give exact location.

JOHN B. HAMILTON, *Supervising Surgeon-General.*

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 27, 1888, to August 3, 1888.

Surgeon D. L. Magruder, U. S. Army, is granted one month's leave of absence, to take effect on or about August 13, 1888. Par. 11, S. O. 171, A. G. O., July 25, 1888.

Major Richard S. Vickery, Surgeon U. S. Army, leave of absence extended two months. S. O. 166, A. G. O., July 19, 1888.

Surgeon Robert H. White, U. S. Army, is relieved from duty with battalion First Infantry at Santa Barbara, Cal., and will proceed to Angel Island, Cal., on public business, on the completion of which he will stand relieved from duty in this department. Par. 4, S. O. 43, Hdqrs. Dept. of Cal., July 17, 1888.

Asst. Surgeon Curtis E. Munn, U. S. Army, will proceed to Santa Barbara, Cal., and report to commanding officer of the First Battalion of Infantry for duty. Par. 3, S. O. 43, Hdqrs. Dept. of Cal., July 17, 1888.

Asst. Surgeon John J. Cochran, U. S. Army, will proceed to Benicia Bks., Cal., on public duty, on completion of which he will return to these Hdqrs. Par. 1, S. O. 44, Hdqrs. Dept. of Cal., San Francisco, Cal., July 20, 1888.

Asst. Surgeon Reuben L. Robertson, U. S. Army, is relieved from duty at Ft. Keogh, Mont. Ter., and will report to the commanding officer at Ft. Buford, Dak., for duty at that post, and by letter to the commanding general, Dept. of Dak. S. O. 161 A. G. O., July, 20, 1888.

Asst. Surgeon N. S. Jarvis, U. S. Army, is granted one month's leave of absence, on surgeon's certificate of disability, with permission to go beyond the limits of the Department. Par. 1, S. O. 90, Hdqrs. Dept. of the Missouri.

Capt. Henry Johnson, Medical Storekeeper, U. S. Army, leave of absence granted for one month and fourteen days, from August 1, 1888. S. O. 170, Hdqrs. of the Army, A. G. O., July 24, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending July 28, 1888.

Surgeon Thomas N. Penrose, detached from Navy Yard, Boston.

Surgeon J. B. Parker, ordered to the Navy Yard, Boston. Albert McD. McCormick, commissioned Asst. Surgeon in the Navy.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending July 28, 1888.

Surgeon R. D. Murray, to proceed to Manatee, Fla., on special duty. July 21, 1888.

P. A. Surgeon Eugene Wasdin, to proceed to Key West, Fla., for temporary duty. July 21, 1888.

Asst. Surgeon J. B. Fattie, to proceed to Memphis, Tenn., for temporary duty. July 28, 1888.

Asst. Surgeon R. M. Woodward, when relieved, to proceed to Boston, Mass., for duty. July 24, 1888.

Asst. Surgeon H. T. Goodwin, when relieved, to proceed to Cincinnati, O., for duty. July 24, 1888.

Asst. Surgeon G. M. Guit  ras, appointed an Asst. Surgeon July 23, 1888. Assigned to duty at Marine Hospital, New Orleans, La. July 24, 1888.

Asst. Surgeon S. H. Hussey, appointed an Asst. Surgeon July 23, 1888. Assigned to duty at Marine Hospital, Baltimore, Md., July 24, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, AUGUST 11, 1888.

No. 6.

ADDRESS IN GYNECOLOGY.

HOW GYNECOLOGY IS TAUGHT.

Being the Address of the Chairman of the Section on Obstetrics at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY ELY VAN DE WARKER, M.D.,
OF SYRACUSE, N. Y.

The Victorian period furnishes no more marked example of the evolution of a great science and a technical art, than the growth of gynecology during a single generation. The Imperial Dictionary says that gynecology is the doctrine of the nature and diseases of women. Brief as is this definition it includes a field too extensive with too many elements of medical and surgical complexity to be defined as a specialty. Every province of Medicine is placed under tribute. Ethics, dialectics, casuistry and sociology contribute to the solution of mental, moral, social, and physical problems in a field where priest and logician claim an equal right with the medical man. The depths to which gynecic surgery may penetrate have not yet been sounded, while operations so desperate that the surgeon is sustained only by his training and the courage of his convictions, are simple matters of routine. Surely this cannot be called a specialty. I would define it as general medicine and surgery brought as near perfection as the age permits; and gives direction by certain mental qualities in the medical man himself.

This brings us to speak of the man and the large element of personal equation that shapes him for his work and in the direction of which he has a certain natural drift, for which he is fitted only by gradually maturing in his calling. How else can he be prepared with the large measure of sympathy and the boundless patience that he must expend in the routine of his daily life; how else can he make himself at one with a moral nature that stands in the order of vital events at the opposite pole of spiritual life to his own? He must be possessed of some innate qualities of truth and consistency in order to deal with a being specially created by God to understand and interpret him. His inner life must be free from guile, and his outer life lived cleanly, that he may gain the confidence of one to whom all good-

ness, and beauty and truth are sexual traits of mind. He must have a sturdy and manly moral nature that will give repose to those about him, that can lead at all times, and that can govern when he must.

Such is, I believe, the thing called gynecology, and measurably approaching this standard must be the gynecologist. When we take into consideration the fact that this is the growth of but a single generation, the conclusion that gynecology has outgrown the system of medical education as it exists to-day is evident, and further, that it is not the outcome of any existing method of medical training, but the product of the period, and has simply kept pace with the march of events in the intellectual evolution of the age. We can account for the gynecologist in no other way. No college has educated him, no polyclinic has turned out the finished product, but the history of civilization has shown that surely out of human needs has grown the supply of every want. Heretofore he has been an accident, but the necessity having created him, the supply can no longer be left to chance, he must be educated to meet the want.

Here we touch the real difficulty of the question. Has medical education in any existing system perfected itself to meet the needs of the civilization of which it is a part? We may say of any of the special sciences, outside of medicine, that in some centre of learning each may be followed to the ultimate borders of its progress, and what is of equal value, one may there cross the borders, and add to the material facts of his chosen field, but leaving out the pure sciences as they exist in their special forms, we find the applied sciences taught to meet the demand that called them into existence. Steam has created the mechanical engineer, and has perfected schools to educate him. Electricity has produced the electrical engineer and technical schools are able to turn out the finished expert. Scientific warfare has created special schools where the most advanced forms can be practically taught. The same thoroughness of technical education applied to medicine seems to carry the student away from its simple practice to that of the secluded laboratory, or in the direction of the great specialty of the future,—State Medicine, as we

can already see it in the government laboratories of Europe. Each step in advance as it has assumed a form made necessary by the demand of social evolution has enlarged the bounds of practical education, that of the work-shop, the laboratory and the instrument of precision. There is not an exception to this law anywhere in the line of march of material progress.

This is not a national matter, but is cosmopolitan in its breadth; but as America is the country in which the most finished forms of the gynecologist has been produced let us turn to our own standard of medical education, and to our best methods as they exist to-day, and question what are the chances of meeting the requirements of the future? You must remember, that I and my contemporaries in the profession passed through our medical training with scarcely a suspicion that such a thing as gynecology existed. The teacher to whom we looked for instruction in this department held the chair of Obstetrics and the Diseases of Women and Children, and he was expected to do all of this in the short space of sixteen weeks. Why the function of this one man was limited by subjects that he never taught, and that it was impossible for him to teach, was one of the mysteries of the system. Such was the fact, not only in my college, but all over the land, and what is yet more to the point, in not a few instances, it is a fact to-day.

I have been able, by means of some publications of the Illinois State Board of Health, to examine into the teaching methods of our medical colleges. And here let me say, that I know there are a number of distinguished teachers before me, and no one will more willingly accord to them than I the merit that they have so honorably won. It must be understood, then, that I say without disrespect, but also without fear, that the medical teaching of to-day does not as perfectly reflect the actual state of medicine, or as completely meet its needs, as that of twenty-five or thirty years ago. At the time of which I speak, gynecology was obstetrics. There was no separating them, and, indeed, no need; for all that was known of gynecology was practiced through a narrow tube called a speculum, and its surgery varied from the potassa fusa of Simpson to the antiphlogistic touches of Meigs. Now let us see how this important subject, that involves so large a part of the life-work of every medical man, is disposed of in American medical schools. I have selected only those that are accepted by the Illinois Board of Health; nor have I drawn the line at medical sectarianism, for every woman, no matter what may be the particular "pathy" of her medical attendant, has a right to expect that her sexual ills are safe in his hands. I have here a list of 109 medical colleges, so-called, and 56 of them have the diseases of women taught by the Professor of Obstetrics, and 14 of them still re-

taining under this head the diseases of children. There may be other means of teaching gynecic medicine, but if so no mention is made of the fact in the list of teachers. In 82 there are either professors, lecturers or instructors of gynecology, and as such are given a place in the faculty. In 10 no mention is made of the subject of women's diseases at all. That is, the professor of obstetrics is such only, and no mention is made of his occupying the double chair of the first group. So far as these schools give us any knowledge of their methods, the subject of gynecology has no place in their curriculum. One school that stands by itself in my tabulation mentions that 44 lectures are given upon gynecology. This part of my table gives us 66 colleges out of 109 in which the diseases of women is either taught by the Professor of Obstetrics, or is not taught at all.

This is the old method of work, and like the majority of things that are old has the merit of being respectable to say the least. According to my way of thinking worse remains to be told, worse in the sense that if the new method, the graded system, does not give us something better it implies failure and defeat, and thus the cause of medical education is set back another generation. Now I do not believe that any one will dispute me when I assert that the so-called graded system came from the practicing body of the profession and not from the teaching branch. I have watched and studied this change from its inception and think that I know something about it from the non-teaching side of the question. Years of agitation in this Association, in State and local societies were needed before any practical shape was given to reform, and even then nothing was gained from the teaching branch of the profession. Reform emanated directly from the practicing ranks. The change was not grafted upon an old school, but was given form in a new school with its faculty recruited from the rank and file. This was the college at Syracuse, and the graded method of study forms the sole basis of instruction. The establishment of this school marked the period that was ripe for reform. Fifteen years have passed since, and in this interval but thirteen colleges are organized upon a required basis of graded study. In all other instances it is recommended, but not *required*. The advocates of this reform can find no cause of offense if we stop to critically examine the measure of good that has been the outcome of the method.

And first, I may say for the great mass of the profession, that the new departure was well received. They were pleased to know that the growing demand for higher medical culture was met in a fair spirit, and while a few schools conformed to the demand, it was looked upon as a beginning reformation. Courage and faith in the real depth of the reform spirit in the mass of the profession was needed on the part of those who

embarked in the new system. The commercial enterprise of the majority of the schools was arrayed against it, and disaster was continually predicted for the new movement. So active was the reform spirit that several schools began their chartered existence with the graded system as a part of their organic law, and that without which would have had little reason to exist, but flourished in spite of, or by reason of, a state of nearly open warfare. These few words tell the history of the movement, for here the matter ended. The inertia of the commercial spirit rests upon it, and the old and new have struck hands in a sort of unholy alliance. Not to my knowledge has there been any addition to the ranks of the new schools. Among 109 institutions 13 have the graded plan of study as a required curriculum.

President Andrew D. White, before the Yale College Alumni, reviews in a most caustic address, the defects of our educational, social and intellectual life. All the deficiencies that an American of cosmopolitan culture would be ashamed of, he attributed to a broad undercurrent of retarding influence that he called mercantilism. He did not refer to American medical education as an instance of this overpowering trade spirit, but it asserts its presence as powerfully in the professional training school as in the academy or in the senate. Upon this theory we may explain what happened to the young and promising reform party. It found itself circumscribed as with a rampart by this mercantilism and barely held its place. It did not advance. It is to-day what it was in the beginning, and has become as indifferent to the progressive spirit of the age as the old order of things that it endeavored to replace. There was a fatal mistake made at the very beginning of the reform in regarding it as established, instead of being merely a trial of the new order of things upon its merits—an experiment capable of being extended and improved. At the time the change in medical education found a few practical adherents, educational methods were receiving great attention, and old ideas were giving place to new upon every side. The reform in medical teaching differed from that in other fields of education in moving at once to some radical changes, and then becoming as fixed in its new direction as it was in the old, while in the latter the subjects as well as the methods of education are debated as earnestly to-day as when the movement began. Matters are yet in a state of evolution, and step by step the questions are being solved. Another singular difference also exists, as I shall show. The new medical curriculum has taken up methods of teaching that advanced educationalists have abandoned; thus, while the text-book is becoming less an instrument of higher education, it has more or less usurped the place of the didactic lecture in the graded medical school. The result to my mind is serious, and is becoming evident in

the fact that reform medical education is taking up the very methods that progressive education is abandoning for demonstration and the didactic lecture. It is a total misconception of the purpose of a text-book to place it before the student as a substitute for the magnetic personality of the living teacher. Now a medical man may be defined as one trained to observe natural phenomena in a certain special field, and he must be trained to observe as accurately the phases of disease as the operation of that uncertain factor called a remedy. I assert, and no one who has been a thorough and original student will contradict me, that the text-book was never written and never so carefully studied, as would transform the untrained man into the accurate observer; but I will go further, and say that just in proportion as he masters his text-book will he narrow his mental horizon and blunt his observing faculties. If it is the purpose of medical education to simply fit a man to pass an examination, a series of memorized facts acquired under the drill of a simple coach—for to that function have many professors degenerated—is as good an education, if not even better, than any other, but while being thus educated the student has been exercising one of the lowest faculties of his intellect, leaving higher and more useful faculties untrained. The dangers of this method do not end here. I say flatly that the text-book cannot educate, but it has entered into branches from which it ought to have been excluded, if the object to be gained was education. For instance, Anatomy and Materia Medica in the new medical curriculum have by nearly common consent been surrendered to text-book teaching. What ought to be a series of object lectures, each fact being materialized and studied in its exact and natural relation, is reduced to a useless memorizing of a mass of disjointed facts that no amount of after training will place at the call of the man in after life when text-books are forgotten. What ought to be entirely laboratory work and lecture demonstration, is taught exclusively in the recitation room.

If you remonstrate with an advocate of this method he will point with pride to the high average of the man's term examination, as though technical education could be represented, like interest, at so much per cent. The teaching of anatomy was crude enough under the old method in the majority of the schools, but it is incomparably worse in those in which the text-book has gained the ascendancy. It is extraordinary that small country schools that aspired to take a high rank as thorough teaching bodies did not see the advantage that would result to them of excluding the elementary sciences entirely from the recitation room and making them the subjects of laboratory work. So far for the student. But I believe that the effect upon the teacher is equally bad. A medical teacher, of all men given to that calling,

ought to be a man growing continually deeper in his knowledge, wider in his range of mental vision, and riper and more complete in his method of work. He reaches these progressive levels of development by study and experience in his real specialty, that of teaching. Conceive of the effect upon any ordinary man of sitting before a class of young men, with his book upon his knee, and hearing a mechanical recitation, while he industriously marks his men as they repeat more or less accurately the pages of the author then in the ascendant upon the subject-matter of the professor's topic. Can he develop? Will his character round out in the fullness of time into the perfect teacher who inspires enthusiasm, clarifies the understandings of his students, and contributes his share toward developing that most complete embodiment of the education of the age, the scientific observer?

What retards the growth of the graded system? why is it recommended instead of required in 96 out of 109 colleges? The reason is, I believe, mainly due to the fact that practical educators recognize the insuperable difficulties of joining a system of graded study to a three years course of the numerous subjects that enter into a medical education. In some schools anatomy consumes two years, the freshmen of the second year taking it up where the freshmen of the year before left it off. The same was true of physiology, and yet in this same year clinical medicine and surgery, with therapeutics, had of necessity to be taken up. I know of no school where the elementary sciences were cleanly finished up in the freshman year under the graded system. This is not the place, nor have I the time to give all the reasons necessary to prove my position that the old didactic three years course of study must be abandoned in favor of a four years course of study, in order to perfect a system of graded medical training. Nor has the demand of the profession been satisfied by this imperfect attempt at reform. The growth of the polyclinic, the development of which has been a phenomenal outgrowth of the attempted reform in medical education, is one of the best evidences that the working body of the profession is in search of something better in the way of technical training than is afforded by the medical college. Their existence as teaching bodies independent of the regular schools still further complicates the question, and will in the future add further difficulties in the way of the adjustment of the conflict that exists between the just demands of the body of the profession and what we are compelled to regard as the mercantilism of the schools.

Under this so-called graded system gynecology has fared more poorly than under the old method. In one school dermatology is given a full chair, while gynecology is in charge of an instructor, at the end of everything. Three of the schools have

the subject assigned to the second year, while the ten remaining have given it to the third year. It appears as much out of place in one as in the other, if we are to find a place for it among the following third year studies as advertised by one school, namely: Therapeutics, practice, surgery, clinics, obstetrics, pediatrics, gynecology, forensic medicine, ophthalmology, hygiene. This school gravely states in its advertisement that "steady growth and not distension is the result" of the graded system.

Now, under these circumstances, how is gynecology taught? It is simply not taught. The graduate leaves his alma mater with his mind like virgin soil so far as this great branch is concerned. In forming an estimate of what a medical college can do we must take into consideration our own personal bias. We of this Section insist that medical education should tend to make a student a safe and efficient obstetrician and gynecologist, while the ophthalmologist makes the same demand for his Section, and the neurologist for his. Now we must admit that it is not the purpose, nor is it possible, for medical schools to turn out the finished expert in the practical subdivisions. In this sense we must regard the school as a primary department in medicine. It sows the seed, and each one reaps a harvest according to his needs, or the quality of his manhood. If in all the special fields, in which a practical knowledge implies brain culture with manual training, the medical teacher will teach correctly, consuming the time, brief of necessity, that the student can devote to the branch, grounding him in practical education with sound *viva voce* object teaching, and not textbook recitation with a view to passing an examination, the man may be safely left to himself in the field of practice. Teach him to observe and how to examine, and knowledge and expertness will come to him. The man who travels through a strange country with a map and compass does not find depicted every declivity and vale and devious winding of his route. His map gives a series of suggestions, his compass points the way, the landscape is new and strange, yet with trained faculties of observation he safely pursues his way.

We are living to-day under a new dispensation in the matter of teaching gynecology, and that is the influence diffused among us by the womens' hospitals. Starting from the germ planted by our great master Sims in the Woman's Hospital of the State of New York, scarce a city of the land but has its hospital, great or small, public or private, where some faithful master, surrounded by a little band of followers, works and teaches. Each becomes a nucleus from which radiate widely diverging influences, the result of which may be seen in nearly every hamlet of the land. But a few years have witnessed this influence at work among us, and but a few years bear the token of the new art itself, yet the numbers who have re-

ceived their inspiration and teaching from this source may be numbered by thousands. Those who were under the personal influence of Sims realize the full meaning of this. Being in touch with this man has sent a thrill of enthusiasm down far-reaching channels of medical life that has not yet ceased to vibrate. To us the man is a memory, in a few years he will become a tradition, and will pass into the history of a great people and of a beneficent art, while his influence over the thinking and doing of those who come after him in his beloved art is ever growing wider and deeper. Sims was a man of the working ranks. He was the apostle of the general practitioner, he leavened the mass, he diffused through it his superabundant individuality like a subtle essence. To his teaching, his example, and his enthusiasm we owe the position we occupy among the nations as gynecologists.

ORIGINAL ARTICLES.

LIVING AND DEAD OSTEOMAS OF THE NASAL AND ITS ACCESSORY CAVITIES.

ILLUSTRATED BY A CASE OF ENCYSTED ORBITAL OSTEOMA ORIGINATING IN THE ETHMOID BOXE.

Read in the Section on Surgery at the Thirty-eighth Annual Meeting of the American Medical Association, May, 1887.

BY CHRISTIAN FENGER, M.D.,
CHICAGO, ILL.

Spencer Watson called attention in 1868,¹ to the fact that a peculiar form of exostosis not infrequently developed from the walls of the ethmoidal cells and the sinuses of the frontal and ethmoid bones. Frequently these osseous tumors developed into the orbit and encroached upon the eye, displacing and finally destroying it by pressure. It was the practical importance of the latter fact that directed especial attention to the so-called orbital osteomas. Cruveilhier had before this shown that osseous tumors were often encysted or surrounded by a peripheral layer of bone. Virchow pointed out that orbital osteomas often developed in the diploë of the surrounding bones expanding their cortical substance so as to be "encysted," by a layer of the latter, but at the same time he made the distinction between these enostoses and true exostoses originating in the periosteum of the walls of the orbit.

Arnold first called attention to the fact that orbital osteomas often had their primary seat in the surrounding sinuses, and from here later in their growth entered the orbit. The true relation of the encysted osteomas of the orbit, of Cruveilhier, to the nose and accessory cavities, was not

thoroughly revealed until 1881, when Bornhaupt,² in an excellent article describing an orbital osteoma originated in the frontal sinus and operated upon by Volkmann in Halle, gathered from the literature not less than fifty cases of these tumors. From Bornhaupt's exhaustive investigations on this subject, the most important points regarding the development, as well as the diagnosis, prognosis and treatment, hitherto unknown, have been brought forth; and we owe to him our present somewhat thorough knowledge of the subject, together with most valuable practical suggestions as to the rational method of operating for their removal.

Tillmans³ has lately called attention to the fact that similar osteomas develop also from the walls of the nasal cavity, and that the dead osteomas described by Dolbeau, lying loose in the frontal sinus, belong to the same class of osseous tumors.

My attention has been especially directed to this subject by the following case:

Morits Mayer, 24 years of age, tailor, was admitted to Cook County Hospital, April 27, 1887. He gives the following history: Parents lived to old age and there is no history of tumors or deformities in any of his ancestors or relatives. Patient had measles when a child, but otherwise has always been strong and healthy. He dates his present illness from 1878, when he was struck by a club at the inner canthus of the right eye, causing fracture of the bones of the nose. In the course of a year a swelling appeared and increased slowly and without pain in the above named region, causing the right eye to be pushed outward. He thinks the swelling has remained stationary for the last eight years. Five years ago a discharge of pus from the right nostril commenced and has continued ever since. Four months ago an abscess formed in the inner canthus. It was opened and left two fistulous openings which discharge a moderate amount of pus.

Present condition.—The patient is well nourished, somewhat pale, but otherwise looks healthy.

On the right side of the root of the nose is a flat prominence which fills up its inner third from the superciliary arch down to the infra-orbital ridge and extends a little in front of the bridge of the nose. The superciliary region of the frontal bone, that is, the anterior wall of the frontal sinus is not enlarged or pushed forward. The skin covering the tumor is normal with the exception of a red inflamed area around the two fistulous openings. The probe introduced through these, finds roughened bone near the surface, and the entire tumor feels hard, as if consisting of bone covered only by skin. The infraorbital margin can be traced to within a line or two in-

²Langenbeck, Archiv für klinische Chirurgie, 1881. B. 26, p. 589. Ein Fall von linksseitigem Stirnhöhlen-Osteom, nebst Bemerkungen über die in den Nebenhöhlen der Nasen, sich entwickelnden Osteome.

³Ibid. B. 32, Heft 3, page 677. Ueber todte Osteome der Nasen und Stirnhöhlen.

¹Transactions of the Pathological Society of London, 1868, page 314.

side the infraorbital foramen, where it gives place to the hard tumor arising from below.

The eye is pushed downward and somewhat outward, and on examination by Dr. E. M. Smith, oculist to the Cook County Hospital, presents the following condition: Right eye deviated outward and downward; distance from nasal crest to pupil on left side, 30 mm.; on right side, 50 mm.; consequently the outward deviation is 20 mm.; deviation downward, 10 mm.; exophthalmos, 7 mm. There is slight hypermetropia, the pupil is active, the tension of the eyeball normal. Ophthalmoscopic examination shows the fundus normal, the optic papilla not swollen, but the veins are somewhat engorged and tortuous. Acuteness of vision good.

Inspection of nose shows, an inch and a half inside the nostril, instead of the inferior and superior meatus and the concha, an irregular mass covered with bluish-red mucous membrane, and to which several small polypi the size of a pea are attached.

The infraorbital region is somewhat prominent in its nasal half, but no distinct tumor can be felt behind the upper lip above the alveolar process of the upper maxilla.

Inspection of the mouth and palate shows no difference between the two sides, and the soft palate and pharynx are normal. Rhinoscopic examination is impossible on account of the thickness and size of the soft palate, the movements of which the patient cannot control. Palpation of the nasopharyngeal cavity with the finger reveals a hard, irregular, rough, bony mass filling up the right posterior coana. A small exploratory incision dilating the fistulous opening of the tumor, in the inner canthus, showed the roughened bony surface of a large osseous tumor which was hard and immovable.



Ethmoidal Osteoma.

Diagnosis.—Orbital osteoma originating in and being part of a large ethmoidal osteoma. The place of origin either in the lower medial point of the frontal sinus or in one of the ethmoidal cells.

Operation.—On May 3, 1887, the patient was anesthetized and an attempt made to introduce a Bellock's tube with a view of tamponing the right cavity of the nose posteriorly and anteriorly, so as to avoid hæmorrhage down into the pharynx. This was frustrated by the tumor in the nose which made the introduction of the tube impossible. The patient was then placed on his back, with his head hanging downward, to be operated upon in Rose's position. A longitudinal incision was made midway between the eye and the root of the nose, commencing on the frontal bone an inch above the orbit and extending downward three inches to the ala of the nose. The incision having been carried down to the tumor, the soft parts were detached by a gouge from the anterior and orbital surface of the latter. The tumor was found to extend far back in the orbit, from an inch to an inch and a half. The surface of the tumor is very hard and the tumor itself immovable. With a view of getting at the base of the tumor, if it existed, or rather, of uncovering the mass of the tumor, I removed with the chisel the nasal and frontal portions of the superior maxilla and the right nasal bone, together with the nasal process of the frontal bone. Having thus opened the frontal sinus I was so fortunate as to find the end of the tumor reaching up, with only a small corner which was not attached to the walls of the frontal sinus at all. Through the large lateral opening into the nasal cavity, the tumor was found filling it up and by grasping with a firm bone forceps, it was easily made movable and brought out through the opening. The bony tumor which was formerly felt in the posterior nares was still there, but it was loose and was removed through the same opening as the other tumor. There was now left a large cavity opening into the frontal sinus and posterior nares, and the nasal and sub-maxillary cavities below. In the orbit, the periosteal covering of its inner wall was intact, covering the eye and its accessory organs. The remainder of the cavity was covered with its mucous membrane, on which several small polypi were found and removed.

There was no considerable hæmorrhage and the wound was united and the cavity washed and packed with iodoform gauze. With the exception of a slight rise in temperature on the second day, the course of the after-treatment was aseptic. The iodoform gauze dressing remained until the close of the second week, at which time the wound had united.

Description of Tumor.—The living osteoma weighs two ounces, measures 2½ inches in length and 1½ inches in diameter; it is irregular in shape, since it consists of several portions, corresponding

to the different cavities which it occupied. These portions, separated by distinct depressions from the central body of the mass, are: 1. The orbital portion which forms a rather square mass of bone, measures $1\frac{1}{2}$ inches from above downwards, $1\frac{1}{2}$ inches in antero-posterior, and $\frac{3}{4}$ inch in transverse diameter. Its anterior ridge is denuded and roughened, while the rest of the tumor is covered with periosteum and a thick layer of mucous membrane. The orbital portion reaches from the internal anterior border of the orbit back to the orbital foramen. From the upper inner corner of the orbital portion a small round projection the size of a pea extends up into the frontal sinus. 2. The portion occupying the antrum of Highmore is a rounded pyramid $\frac{1}{2}$ inch broad $\frac{1}{4}$ inch high, and occupies the cavity mentioned, the nasal wall of which has disappeared. 3. The nasal portion, which forms the bulk of the osteoma is an irregular square of the above mentioned diameter in all directions; its inner surface is covered with a thick layer of mucous membrane, from which three mucous polypi the size of a pea have grown out. At the anterior upper corner of this nasal portion is a large polypous growth $\frac{1}{2}$ inch long, $\frac{1}{4}$ inch broad, pedunculated. It contains a small bony nucleus the size of a pea; in other words forms a small osteoma, by means of a pedicle movable against the large tumor, in which there is a small depression into which it partially fits. The posterior inferior surface of the nasal portion is concave, 1 inch in diameter, covered with a thick layer of smooth connective tissue. The concave surface forms a cup into which the upper rounded surface of the dead osteoma, so to speak, articulates. On the middle of the inner surface of the nasal portion is found a square plate of the ethmoid bone $\frac{1}{2}$ inch in diameter, which I consider the point of origin of the osteoma.

The cut surface of this large osteoma shows a peripheral layer $\frac{1}{4}$ inch in thickness, of extremely hard, compact osseous substance; so hard that a sharp chisel or knife will only with difficulty cut into it, and a smaller central area of cancellous substance, which is so friable as to be penetrated with considerable ease with sharp instruments.

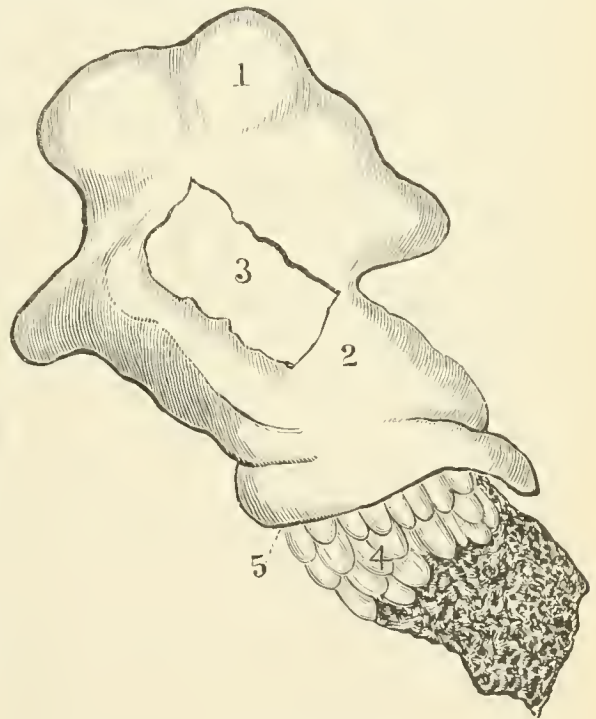
Microscopic examination of the layer of soft tissue covering the tumor shows the following: A layer of cylindrical epithelium, under which is a heavy layer of mucous membrane proper containing numerous tubular mucous glands. Finally, nearest to the bone, a layer of fibrous tissue constituting the periosteum.

The dead osteoma is about $1\frac{1}{2}$ inches long, $\frac{3}{4}$ to 1 inch in diameter. Its upper surface, which has articulated in the above described cavity in the large tumor is rounded, slightly nodular, smooth and hard, like ivory. The rest of the surface is uneven and roughened. Parts of the tumor had been broken off, so that when the whole tumor was put together it would form a

large mass of the size of a walnut. The broken surface shows this to consist of a very thin outer shell of very hard compact bone substance, and within a mass of fine spongy substance, resembling pumice stone.

On the dead osteoma there is nowhere a trace of any membrane covering it and it emits a penetrating fetid odor. No odor at all emanates from the living osteoma.

Etiology and Mode of Origin.—Bornhaupt has found in the literature 23 cases of osteomas in the frontal sinuses, 12 cases of osteomas in the ethmoidal cells, 10 cases of osteomas in the antrum of Highmore, and 5 cases of osteomas in the sphenoidal cavity or sinus. In all 59 cases of encapsulated orbital osteomas. These seem to be more common than the orbital exostoses, of which the literature furnished him only 7 cases. This class of tumor is more prevalent in youth, 54 per cent. occurring before the age of puberty, 87 per cent. before the 30th year; that is, before the final or finished development of the accessory cavities of the nose. It is thus likely that they owe their origin to some disturbance in the development of these cavities.



1. Orbital portion of the living ethmoidal osteoma.
2. Nasal portion of the living ethmoidal osteoma.
3. Lamina of ethmoid bone from which the living osteoma originated.
4. Dead nasal osteoma.
5. Cavity in ethmoidal osteoma in which the nasal osteoma articulates.

A traumatic cause has been noted in 6 of Bornhaupt's and in the present case. Considering the general frequency of traumatism in this region, it

is very unlikely that it plays any part in the etiology of these tumors.

Whether the tumors originate in aberrating islands of cartilage of the primordial cranium or in an embryonal matrix of the periosteum of the membranous cranium, is as yet an open question. The chief argument against the origin from cartilage is, that no partly cartilaginous osteoma has ever been found in or around this region. It is therefore more probable that they develop from the periosteum on the walls of the cavities mentioned.

Pathological Anatomy.—The tumors consist of a mass of bone with a covering of periosteum and mucous membrane.

a.—The osseous mass of the tumor has the following characteristics: The shape of the tumor originally is round. When it enlarges and extends into the orbits or any other adjoining cavity the form becomes modified. At the place where the tumor passes through the wall or opening into the cavity, a contraction or neck forms, on the distal side of which, as if further growth was not now restricted, a roundish, more voluminous portion develops. Thus in the specimen here presented we easily recognize an orbital portion with a depression or neck separated from the larger nasal portion, and at its outer lower point of union with the former, a maxillary portion extends into the antrum of Highmore.

The surface of the osteoma is irregularly nodulated.

The tumors are extremely hard, like ivory, especially on the surface. Thus it is impossible to chisel into or cut away pieces of them. On the cut surface we find a hard peripheral layer surrounding a more spongy center. Sometimes a laminated arrangement of the peripheral hard layer is found. The central spongy area has been described as resembling pumice stone. Whenever the osteomas have a pedicle or base as when they develop in the frontal sinus, as a rule the base is composed of spongy tissue. Thus the tumor can be successfully attacked at this place only. It has often happened that while the operator has been engaged unsuccessfully in chiseling at the body of the tumor it has suddenly become loosened by the breaking of the pedicle.

b.—*The Covering of the Tumor.*—All encapsulated osteomas are covered with a layer of soft tissue, namely, first, periosteum, and outside of this mucous membrane. The latter contains the usual tubular muciferous glands of the nasal mucous membrane, and is covered with cylindrical or fimbriated epithelium. This layer of mucous membrane is sometimes (as in the specimens here presented) thickened and covered with mucous polypous growths.

Invasion of neighboring cavities takes place where the osteoma has grown too large for the cavity in which it originated. The orbit

is most commonly invaded as its walls participate in the formation of the ethmoidal, frontal and maxillary sinuses. The growing osteoma presses upon the bony wall of the orbit, which at the place of contact atrophies and disappears, and the osteoma with its covering of mucous membrane enters the orbit. If the tumor enters from the frontal sinus the eye is pushed downwards and outwards; if the ethmoidal sinus is the point of origin the eye-ball is dislodged outwards. Finally, if the tumor originates in the antrum of Highmore, the displacement will be in an outward and upward direction.

As soon as the orbit is opened, and in consequence, the mucous membrane covering the osteoma comes in contact with the connective tissue spaces of the orbital periosteum or the orbital connective tissue, an abscess forms. The microbes present on the surface and in the mucous glands of the mucous membrane invade the lymph spaces of the affected tissue and, necessarily, traumatic infection resulting in suppuration takes place. Thus an abscess forms near the inner canthus of the eye. In older cases we find one or more fistulous openings leading down to the surface of the orbital portion of the osteoma.

Far more serious in its consequences is the invasion of the cranial cavity by osteomas developed in the frontal or sphenoidal sinuses. The suppuration first between the dura mater and the cranium, later on perforating the dura mater, terminates the patient's life by suppurative leptomeningitis, or abscess of the brain.

Bornhaupt found that of 17 cases of osteoma of the frontal sinuses, in 11 cases, or 65 per cent., opening into the cranial cavity had taken place.

Symptoms.—In the beginning the symptoms are not characteristic as the osteomas grow very slowly, are painless and cause no inflammation as long as they stay in the cavity in which they originate. Enlargement of the wall of the cavity is often found, and next we find a hard, painless tumor in the inner canthus of the eye.

Displacement of the eye-ball is often the first symptom that calls attention to the existence of a tumor.

By filling up the sinus in which it develops and occluding its outlet accumulation of mucous or catarrhal fluid takes place, with subsequent distension followed by the symptoms characteristic of this condition. Finally the abscess forms under the conditions described above.

Diagnosis.—An extremely hard, painless tumor of slow growth, at the inner wall of the orbit, accompanied by abscess and fistulous openings resulting therefrom, makes the diagnosis of encysted osteoma reasonably easy. A very important point to ascertain now is the place of origin of the tumor. As above stated, the deviation of the eye-ball gives us the most important information in this direction. If the eye is pushed down-

ward and outwards, we may expect an osteoma of the frontal sinus; if directly outward the tumor comes from the ethmoidal cells; if upwards and outwards, from the antrum of Highmore.

Prognosis.—The prognosis depends upon the seat of origin of the tumor. Osteomas of the frontal sinuses must be considered as very dangerous. The mortality after the operation has been, according to Bornhaupt, 64 per cent. Of 11 cases, 7 died from meningitis, or abscess of the brain.

Osteoma of the sphenoidal sinus has been operated upon only once by Ferguson. The patient died from collapse shortly after the operation. Other tumors of this variety have not been observed in living patients, but found on specimens in museums.

In the case of osteomas developed away from the cranial cavity the prognosis is entirely different. The ethmoidal, nasal, and supra-maxillary osteomas are not dangerous and can be removed with safety. Out of 12 cases of ethmoidal osteomas, 11 were cured by operation, 1 by spontaneous exfoliation.

Osteomas of the antrum of Highmore give also a good prognosis for extirpation for the same reason as that given for the ethmoidal tumors, namely, the absence of injury to the cranial cavity.

Treatment.—The encysted osteomas have no connection with syphilis, and consequently are not amenable to internal medical treatment. Surgical treatment alone comes into question, that is, extirpation of the tumor. Considering the anatomy of the encysted osteomas, as above described, the plan for operating is obvious. We must expose the tumor by removal of its encysting bony walls, find its base or pedicle, and divide the latter, in order to free the tumor. The extreme hardness of the body of the tumor makes any attempt at removal piecemeal by hammer and chisel almost impossible. Knapp worked five hours on a tumor of the frontal sinus and was able to remove only a small piece. He was obliged to abandon the operation and the patient died from meningitis seven weeks later. Maissonneuve, in trying to chisel off a prominent nodule of an orbital osteoma originating in the ethmoidal cells, found such a degree of hardness that he had to work for a long time with all the different bone instruments with which Charrière, who was present, could furnish him, before he succeeded in removing even a nodule of the tumor.

If we then cannot attack the tumor from its surface, we must lay it open, expose it by removing with the chisel the bones that cover it, the anterior wall of the frontal sinus, nasal and maxillary bones. When the tumor is exposed we look for its base or pedicle. Knapp has pointed out that this part of the osteoma is often composed of soft, spongy bone tissue, so that the chisel may be

used here with advantage. In operating upon ethmoidal osteomas it makes no difference whether the base is hard or soft, because the fine, thin plates of the ethmoidal bone, from which the tumor has grown out, break off and fall out with the tumor with almost the first stroke of the hammer. The specimen here presented shows a plate of the ethmoid bone adherent to the tumor.

The removal of the osteomas from the frontal sinus is more difficult, not so much because the plates of the frontal bone are stronger than the thin ethmoidal plates, but because we dare not break off the cerebral plate of the frontal sinus for fear of meningitis. We must try to divide the pedicle with the chisel without employing much force, and rather leave part of the osteoma than open the cranial cavity (v. Oettingen and Birkett). But even if the most careful manipulation of the instruments is observed, as in Socin's operation described by Banga, in which the tumor, to the astonishment of all present, became loose by almost the first touch of the hammer, the cranial cavity may be opened with disastrous result.

This often unavoidable danger in operating in the frontal sinus induced Mackenzie and Berlin to advise enucleation of the compressed, inflamed, doomed eye, instead of the radical extirpation of the tumor. However unsatisfactory this remedy seems from a surgical standpoint, it deserves earnest consideration, inasmuch as the osteomas are benignant tumors of slow growth and may in course of time separate spontaneously from their point of origin.

Spontaneous loosening of the encapsulated osteomas takes place not infrequently. Beside the small loose or dead osteomas found accidentally in frontal sinuses, of which Tillmans reports 6 cases, we find a case described by Middlemore, who tried to remove an orbital osteoma, but gave up the operation. Nine months later the tumor became loose and was extracted. A similar case is reported by Imre, cited by Tillmans. An orbital osteoma the size of a fist had pushed the eye down to the angle of the mouth. After 43 years duration it became loose spontaneously, and the eye returned to almost its normal place in the orbit. Hilton saw a large osteoma of the antrum of Highmore which had destroyed the eye, become loose after 17 years, during suppuration.

Tillmans reports a case in which he removed by operation two loose dead osteomas of the frontal sinuses and an osteoma of the nasal cavity. He points out that osteomas of the nasal cavity have been as yet very seldom reported. Habermaas saw a case in v. Brun's Klinik. The tumor had originated in the ethmoid bone, with a pedicle the size of a thumb. It was successfully removed by operation. He remarks that the so-called nasal stones or concretions have sometimes been found to contain a nucleus of bone. This fact makes it probable that dead osteomas of the nasal cavity

are more common than has been hitherto believed.

The cause of the spontaneous loosening and death of the osteomas is as yet not satisfactorily settled. Suppuration is generally conceded to be one of the causes.

OBSTINATE HÆMATURIA.

Read in the Section on Practical Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY H. D. DIDAMA, M.D.,

OF SYRACUSE, N. Y.

Bloody urine is common enough. As is well known, the blood may come from lesions of the urethra—lesions sometimes produced by over-cutting strictures—lesions then so painful and persistent that the last estate of the victim is much worse than the first.

The blood may have its origin in the bladder, from fragile veins or papillomata or, as in one case which I saw, from an enormously enlarged prostate, on the raw surface of which a large, rough, concave calculus sat like a crown of thorns.

The bleeding may start in the ureter or pelvis of the kidney, from the cutting of sharp gravel. Or, as in the exanthems and especially after them, it may come, tawny and thoroughly mixed with the urine from the tubules.

It is usually practicable and not very difficult to determine the origin of the hæmorrhage. The flow, often transitory, may be recurrent with intervals whose uncertain length may or may not be the result of treatment.

Every practitioner is familiar with these varieties. He knows the established medication. From the infusion of agrimony or yarrow, recommended more than a hundred years ago by the pious John Wesley, in his "Primitive Physic," to the gallic acid and ergot of modern times, the number of remedies brought forward is almost unlimited. Indeed the excessive richness of the pharmacopœia in urinary hæmostatics, instead of being satisfactory, is absolutely embarrassing—not to say suspicious.

In most of these ordinary cases recovery takes place from the healing influence of time, with or without the help, or hindrance, of drugs.

But hæmaturia is not always mild and tractable. Occasionally, but rarely, cases occur which are extremely perplexing and obstinate.

The *indicatio causalis* furnishes no aid in the treatment, for the cause often eludes the most thorough scrutiny. Attacks on the disease itself, however intelligent, unremitting and persistent, not infrequently end in utter and mortifying discomfiture.

I give the briefest outline of five cases of obstinate, chronic hæmaturia, the only ones that have come under my observation and treatment. Under the care of eminent physicians, for periods from a few weeks to three months, four of these cases

had the best treatment commended by authorities and devised by ingenuity. The treatment in each case was an entire failure. Yet under the use of the remedy to be mentioned in this paper, recovery took place within a period of nine days in four of my five cases, and in the fifth within three weeks.

Case 1.—Mrs. J., a strong, industrious house-keeper, some 40 years of age, had been annoyed with bloody urine for more than six weeks. All bodily functions were normal. She did not know the cause of the hæmaturia. She suffered no pain during nor after micturition, but she was considerably weakened by the constant loss of blood. She had derived no benefit from the numerous domestic remedies which kind friends had recommended.

In one week after commencing the use of the remedy, presently to be described, the hæmorrhage entirely ceased and never returned.

Case 2.—L. F. C., aged about 35, Supervisor of Tompkins County, of light build, but wiry, and fond of all wood, field and stream sports, had been under the care of several bright physicians of Ithaca and elsewhere for more than a month. His urine was never free from blood. The various drugs employed very faithfully never influenced, even temporarily, the amount of the hæmorrhage. After commencing the treatment, which I am purposely withholding in order to sharpen your attention, the bleeding stopped suddenly on the eighth day and never returned. Mr. C. attributed the hæmorrhage to taking cold while gunning.

He died two or three years subsequently of anthrax.

Case 3.—Rev. Dr. N., of New York, 50 years of age, had been under the care of his personal friends, the deservedly eminent Dr. Jared L., and Dr. Alonzo C. The origin of the hæmorrhage was not satisfactorily determined, but from some slight pain in the back the suspicion was entertained that the offending factor was a calculus in the pelvis of the left kidney.

It is not necessary to state that the treatment of their distinguished patient was the best that great wisdom, extensive reading, and a half-century's active practice could furnish.

But the hæmaturia was not controlled in the slightest. At last the reverend gentleman was advised to relinquish his work, travel in Europe and drink the light wines of that country. At this time he had become so weak that he could not leave his house.

But in less than one week after commencing with the remedy, which will not much longer remain unrevealed, the hæmorrhage suddenly and entirely ceased. The trip to Europe was indefinitely postponed. The arduous labors of the good pastor were soon resumed and continued for nearly twenty years. But the hæmorrhage never once returned.

Case 4.—Mrs. W., of Rochester, a lovely woman of 35 years, and good constitution, had an attack of hæmaturia in the spring of 1885. Her physicians, Dr. E. and his partner, both enthusiastic and determined, and eminent among the many distinguished medical men of that charming city, after three months of faithful treatment, advised her to go to New York to consult the great and good Dr. F., and the distinguished gynecologist, Dr. E. They provided her with a letter in which they stated that they had employed every astringent in the whole pharmacopœia without the slightest effect either good or bad. They had washed out the bladder with styptics and all other ancient and modern applications, but the blood had always appeared in the usual quantity at the very first urination after the irrigations. There was no diminution in the amount of blood during or after the administration of any and every remedy employed. An exclusive milk diet produced no effect. Confinement to the house, and even to a horizontal position, never lessened the amount of the hæmorrhage. Neither did free indulgence in all kinds of food and in all the exercise of which in her debilitated state she was capable increase the amount of blood voided. Only at the monthly period—which was free from pain—was the hæmorrhage from the bladder increased.

At the solicitation of friends, and with the hopeless assent of the patient, I visited her at her summer home in 'Sconset. I found her exsanguined. I made as thorough an examination as was practicable. The amount of urine was normal, but it was thoroughly mixed with dark blood, some of which after a time settled in a diffuse, soft clot to the bottom of the vessel. The history of the case and the discovery of tenderness on careful manipulation led to the conclusion that the hæmorrhage arose, in part at least, from the right ureter and pelvis. Examination of the epithelia some weeks afterward seemed to verify this diagnosis.

I related my limited experience and offered to prescribe, but made no promises. The patient, more from politeness than from faith, consented to permit one more attempt in her behalf. Treatment was commenced as soon as medicines could be procured. The remedies were taken faithfully but, as in the other cases, no improvement took place for a week. Indeed, as this was the menstrual period, the amount of blood in the urine actually increased.

The husband now appeared on the scene. I had gone home from my vacation. After consulting with the excellent local physician, Mr. W. decided to go at once to New York, whither he ought to have gone at first. On the eighth day after beginning with the new remedies, the still extremely pale, but somewhat stronger, invalid went by rail and steamer a day's journey to the metropolis, arriving too late in the evening to consult the eminent practitioners. She was much

fatigued, but she noticed an improved condition of the urine. The next morning, for the first time in four months, the urine was entirely free from bloody stain. The New York physicians were not consulted. A return of the hæmorrhage occurred the next summer, but it was soon controlled by the new treatment. Since then there has been no recurrence.

Case 5.—The last case was M., aged 30, laborer, Syracuse. Summer of 1887. No pain, no tenderness, hæmorrhage abundant. Bladder had been washed out and he had taken, under the care of Prof. H., a graduate of Syracuse College of Medicine, moderate doses of the remedy I am anxious to divulge. But the treatment was changed after a little and a cure was not effected. After several weeks of non success, the case came under my observation and was subjected to considerably larger doses of the remedy than I had found necessary in any former case. And even under this management, the hæmorrhage lasted nearly three weeks, with occasional intermissions; when it ceased entirely and has not again returned.

The treatment consists in the administration of 60 grains of alum in the course of twenty-four hours.

In most of the cases this was given in three 20-grain doses dissolved in a goblet of water.

In Mrs. W.'s case the alum was administered every three hours in 8-grain doses, dissolved in half a glass of water. In her case also, on account of the extreme anæmia, 8 minims each of tincture of chloride of iron, dialysed iron and dilute phosphoric acid were given in water after each meal.

In M.'s case the dose of alum was increased to 10 grains every three hours.

Unlike most astringents, alum, in these large doses, does not constipate the bowels. This is doubtless owing to the fact that being largely diluted with water it passes readily into the blood and through the urinary passages. This dilution is very important and should not be neglected. Nausea has not been produced in any case.

I am aware of the ready criticisms which the learned and cautious physicians present will naturally make, and I admit their full force. *Post hoc* is not necessarily *propter hoc*. One swallow does not make a summer, nor satisfy a summer thirst. But *post* may be—and often is—*propter*. And then a whole flock of swallows may be regarded as a pretty safe harbinger of a warm season.

I admit that my aviary of *post hoc* birds is still too limited to be very significant. But these are all I have. I have been many years capturing them. They have a family resemblance. And, somehow, do they not really seem to have a very *propter* kind of look?

A NEW YORK JURY recommends that druggists shall not be allowed to sell rat poison except upon the prescription of a physician.

A NEW METHOD OF INCISION OF THE INTESTINE.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY H. H. MUDD, M.D.,
OF ST. LOUIS, MO.

Enterectomy, or the resection of a portion of the intestine, is regarded as such a tedious and prolonged procedure that many operators hesitate to undertake it in cases in which it is the ideal and desirable operation.

Prolonged exposure of the abdominal viscera and much manipulation of the intestines, adds so much to the shock and also to the danger of exciting peritonitis, that the time and manipulation required by the ordinary methods of excision often render impossible the attempt to thus restore the natural channel.

The tedious and time-taking steps in the operative methods commonly used, have consisted:

Firstly, In the great number of interrupted Lembert or Czerny-Lembert sutures used—twenty or thirty being the approximate number.

Secondly, In the difficulty of placing accurately the sutures at an even distance from the serous margin of the excised border. This margin is concealed and overlapped by the everted mucous membrane; the cut edge is soft, pliable, and hard to manage while placing the sutures.

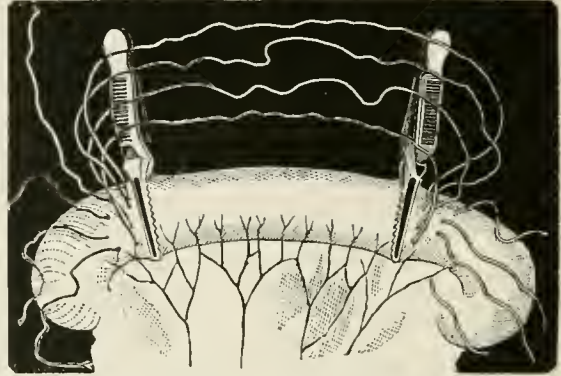
Thirdly, There is difficulty in finding an instrument to compress the bowel so as to prevent the escape of fecal matter without injuring its delicate structure, and at the same time not impede the movements of the operator. The fingers of an assistant are the best, but these tire when so many sutures are to be placed, and the hands of an assistant are in the way of the operator.

I shall not attempt to compare the various operative methods pursued in the resection of the intestine, nor yet attempt to discuss fully the merits of the method which I submit to you for your consideration. The method I have followed obviates some of these delays and difficulties; hence, I venture to submit it to you for your criticism and for trial. The value of any such procedure depends somewhat upon the operator and his familiarity with it, and its general utility can only be attested by the experience of the various surgeons to whom it may commend itself.

The method I have followed during the past few years is one that I first tried March 16, 1886, when called upon to excise a portion of gangrenous intestine for hernia, and as it answered well, I have continued its use in such cases as have demanded resection at my hands, as also in some experimental work.

The method is as follows: The loop of the bowel being made free and easy of access, two pairs of forceps are placed upon it, marking the lines at which the excision is to be made. Seven or eight presection interrupted Lembert sutures are

to be placed before the portion of the bowel to be removed is excised. The outer borders of the forceps serve as an accurate guide for their insertion. A common cambric needle, threaded with a long piece of fine silk, is used to place these interrupted sutures. See cut No. 1.



They are quickly placed, for the intestine is firmly held by the Péan catch forceps or the preputial forceps, which are used as clamps. The needle is entered about three-eighths of an inch from distal side of one pair of the forceps, passed through the serous and muscular coat into the sub-mucous, making its exit about an eighth of an inch from the line of the forceps, after traversing nearly one-fourth of an inch of the intestinal wall. The needle is then carried across the space between the forceps and enters the intestinal wall one-eighth of an inch from the proximal side of the other pair of forceps, and traverses the wall of the intestine, as before described. The thread of the suture thus placed should be long, so as not only to leave a free loop between the two ends of the bowel, but also to give the free ends which are necessary to ease and security in managing and tying the sutures. Two of these sutures, seven in number, should be so placed as to have one on each side of the mesentery; another at the free margin and two intervening sutures on each side of the bowel, dividing equally the space between the free and mesenteric borders. These sutures should be left with long threads and not tied until after the excision is made.

The mesentery should now be secured, by including it, when not more than two or three inches of the intestine is removed, in a single ligature which should be placed parallel to not more than half an inch from the mesenteric border of the intestine. The section of the mesentery is made between the ligature and the border of the gut. The portion of the mesentery included should be fully equal to the intestine excised.

The section of the intestine is now to be made. Before making the section, the bowel at the proximal and distal side is emptied of its contents and held by an assistant with his fingers. The opera-

tor now slips a finger on each side of the portion to be removed, but under the loops of the sutures, and carries these loops first to the distal and then to the proximal side of the two pairs of forceps. The scissors are introduced between the suture loops and the bowel. The section of the bowel is made first at the distal side and then at the proximal end. The bowel and the forceps are removed together.

The line of the Lembert sutures, when thus placed, is even and regular. These presection approximation sutures are tightened as soon as the portion to be excised is removed, and the divided ends cleansed. A continuous suture of fine catgut carried about the bowel, approximates more perfectly the surface of the serous membrane, and closes any gap that may be left between the interrupted sutures. (See cut No. 2.) The seven interrupted sutures thus placed are quickly and readily tied after the section is made. The continuous suture is easily applied and does not necessarily invert any more of the bowel. The time occupied in such an operation ought not to be more than fifteen or twenty-five minutes, after the bowel is exposed and makes possible an enterectomy when the older methods are not permissible, for the time occupied need not exceed that necessary for the production of an artificial anus.



The advantages believed to be possessed by this method of operation, are :

1. The manipulation of the portions of the intestine which are to be united is reduced to a minimum.
2. All tissue which has been included in the grip of the compression forceps is removed.
3. The line of the forceps gives an accurate and perfect guide for the placing of the sutures, and makes certain the section and the reunion of the bowel at right angles to its axis.
4. The rapidity with which the interrupted Lembert sutures can be placed is very much greater than where the attempt is made to put them in position after dividing the bowel, and the divided ends are not long exposed ; hence, it is more nearly the ideal aseptic operation.
5. The union of the divided ends is accurate

and sufficiently firm to retain fluid matter. This is accomplished with a few—seven or eight—interrupted silk sutures and a continuous catgut suture placed in or near the same line as that occupied by the interrupted sutures. This continuous catgut suture extends around the circumference of the bowel, reinforcing and sealing the Lembert sutures.

6. The eversion of the mucous membrane is controlled and faecal extravasation prevented.

7. The time necessary to complete the operation is much shortened, because (a) the clamps give easy and perfect control of the suture line ; (b) a limited number of interrupted sutures are used ; (c) the continuous catgut suture is quickly and easily placed ; (d) there is no delay in pushing out of the way the everted mucous membrane which so much delays the placing of the interrupted sutures.

The difficulty of securing the serous margin and holding quietly the edge that is to be approximated can be appreciated only by those who have made the effort.

The only stumbling block in the way of a rapid and satisfactory operation is the management of the long threads of the presection Lembert sutures after placing them, and while making the section of the bowel. This is easily overcome by placing them on a folded towel and by slipping the fingers under the central portion of the loops on each side of the bowel, and carrying the loops back with the fingers beyond the forceps, over the healthy intestine, previous to making the section. The interrupted and the continuous sutures should be carried well down into the wall of the bowel, so as to include the sub-mucous tissue.

The Péan catch forceps answer well for the clamps. I have, in the human subject, had a successful case where a free evacuation of the bowel followed the operation within twenty-four (24) hours, and occurred daily thereafter. Post-mortem examination after thus excising gangrenous intestine, the result of strangulated hernia, has uniformly demonstrated good union and no leakage at the intestinal wound.

This method of excision was in part described by me in July, 1887, at the meeting of the Mississippi Valley Medical Association, held at Crab Orchard Springs, Kentucky.

THE DEATH is announced of the first female medical practitioner who settled in the important Siberian city of Tobolsk, where she had entire charge of the female department of the city hospital and lunatic asylum. She lectured also at the School of Midwifery and had a considerable private practice. In addition to her multifarious duties she found time to pursue scientific investigations. She is stated to have habitually worked sixteen hours a day.

TREATMENT OF STRICTURES OF THE MALE URETHRA BY ELECTROLYSIS.

BY J. D. THOMAS, M.D.,

OF PITTSBURG, PA.

PROFESSOR OF GENITO-URINARY AND VENEREAL DISEASES, WESTERN PENNSYLVANIA MEDICAL COLLEGE.

Some two years ago I became enthusiastic with regard to the treatment of strictures of the male urethra by electrolysis, and this enthusiasm was engendered by the glowing reports of cures from such treatment in some of our medical journals, and by various contributors, but notable among these were Newman, of New York, and Belfield, of Chicago.

I am now satisfied that it was the enthusiasm of the moment that led me astray, for if I had analyzed the cases reported with that candor that a medical man should always exercise I would have evinced some skepticism before beginning my work. As it was I went at the task with the enthusiasm of a devoted lover. The outcome of my devotion I lay before you to-day.

To perform the work I invested in the most approved appliances, for I believed from what I had read that dilatation, divulsion, internal and external urethrotomy were to be relegated to the dead past, so far as they were to be of any further utility in the treatment of strictures, and that all that was necessary in these cases to effect a cure was to pass the electrodes. But permit me to give you the facts from experience and the results of electrolysis as epitomized from my case-book.

Case.—S. K. M. presented himself on November 30, 1887, with the history of having contracted a gonorrhœa sixteen years before. The discharge continued for one year, then ceased for a time, but to again return. The discharge was so intermitted up to the present time. Examination of the urine shows an accompanying cystitis. He has been treated by many doctors and in many ways. On exploring the urethra I find several strictures, the deepest one at $5\frac{1}{2}$ inches from the meatus, admitting No. 11 French bulbous bougie. The patient did not attend with that regularity which he should, but by March 11 (a little over three months) I had succeeded in dilating his strictures up to 24 F., his normal calibre being 32 F., but the strictures were resilient and resisted any further dilatation. You will readily appreciate that the patient was now in a good condition for internal urethrotomy and a speedy cure.

At this time, however, the patient became ill with an intercurrent trouble, and did not again present himself until April 15, a little over a month since last treatment, and on reëxamination I found that the urethra would now only admit a No. 20 F.

I by this time had received my electrolytic apparatus, and went to work on this patient—a most excellent one for the test—with the

greatest assurance. My notes of the case run as follows:

April 15, 1887. Passed No. 20 F. electrode (negative pole), occupying ten minutes, and using three cells.

April 22. No bad results from last treatment. Passed No. 22 F. by electrolysis, using six cells during the séance, and occupying fifteen minutes.

May 14. Nothing larger than No. 22 F. would pass.

May 26. Failed to pass No. 24 F. through first stricture, with a gradual increase of cells up to nine. No. 22 F. passed, but with more difficulty than on the previous occasion.

June 4. Patient presented himself with an inflammation of the urethra anterior to the first stricture (which was $\frac{3}{4}$ -inch from meatus) so severe in character that the lips of the meatus had a tendency to agglutinate.

My patient never returned. I had spent two months in the treatment by electrolysis, and my patient was worse off than when I discontinued treatment by gradual dilatation. In this case the electricity was administered carefully—increased cell by cell—and at no time did the patient complain of much burning or pain from the current. I gradually went up to nine cells because a less number produced no impression upon the strictures—there was no absorption. All the directions, to the letter, were carried out as laid down by the advocates of the method.

I was very much chagrined with the result in the above case. Not being entirely daunted, however, I went on with the work. To not burden you with the particulars I will simply state that I afterwards treated several cases, some with strictures of large calibre, others with strictures of small calibre, and gave each patient about two months' treatment, but not one of them derived any benefit from the treatment, and were afterwards cured by orthodox methods.

By analyzing Dr. Newman's "Synopsis of the Second Hundred Cases of Stricture of the Urethra Treated by Electrolysis," as reported in vol. ix, No. 13, of *THE JOURNAL*, we find that out of the whole number, when discharged, only *three* had their strictures enlarged to more than No. 30 F., whilst some were discharged with their urethra admitting only a No. 14 F. The calibre of ordinary urethrae being of the dimensions of a No. 31 F., it is quite an imposition upon the credulity of the profession to state that such patients were, as we are led to believe, cured. Out of one hundred cases some few would surely have urethrae whose normal calibre would admit a No. 40 F., but the three cases mentioned were only enlarged to No. 32 F.; and further, when treatment began the strictures of these three were large ones, ranging from 21 F. to 25 F.

Twenty out of the hundred were never seen after treatment was discontinued.

Twenty-four only were reëxamined, and but *nine* of these after the lapse of two years from last treatment.

The remainder, we are told, "were well," and we are to accept the assertion, I presume, on faith. I can recall patients who were treated eight years ago by gradual dilatation, and they say to-day that they are well, and they will continue to so say until enough recontraction has taken place to interfere with the urinary function. But I would not be justified in saying that they are well—cured.

It is taught, and I believe such teaching is correct, that a case of stricture of the urethra is not cured until the normal calibre of the urethra is established throughout its entire extent. On examining critically the cases of Dr. Newman referred to in this paper not one of them, according to my standard, was cured.

If we take up the cases of the other reporters who claim so much for electrolysis and analyze them, we come to the same conclusion that we do in Dr. Newman's cases.

Now, the point may be raised that my failure of success with electrolysis was due to a want, upon my part, of the correct appliances; also that I was lacking in *technique* and dexterity in the manipulation of urethral instruments. The first point cannot be maintained, for I secured the most approved apparatus. As to the other objections I have no reply to make. But this I do know, and from personal interviews with some of them, that the most expert genito-urinary surgeons and those having world-wide reputations, like myself have failed, after honest work, in deriving any good results from electrolysis in the treatment of urethral strictures.

After candid consideration and a fair amount of experience, I firmly believe that these reporters, and to be charitable with them, are laboring under a delusion, and what success they claim as being derived from electrolysis is secured purely by the dilating effect of their bougies. It will be observed that the most of their cases are only enlarged up to from 20 F. to 28 F., the amount of improvement that is ordinarily secured without much trouble by gradual dilatation. We know that strictures frequently, after being dilated up to a certain point, cease to dilate any further, when urethrotomy becomes necessary. Now, it will be observed, further, that the cases treated by electrolysis are only dilated up to a certain point; none are dilated completely.

Among the hundred cases herein referred to are some in which it is stated that, after a filiform had failed to pass in other hands, an electrode bougie went through on the first attempt. That proves nothing, for the urethral canal is a very unreliable one, owing to its proneness to spasm, as all know who have had some experience. During the early part of this year I introduced a No. 18 F. sound into a certain urethra without much trouble. Four

days afterwards I could not introduce even a filiform. Upon the second attempt the surroundings were different, and the obstruction was purely spasmodic in its nature.

If electrolysis, in the treatment of urethral strictures, is "a delusion and a snare," I hope this paper will bring out the experience of those who can speak *ex cathedra* upon the subject, and if the consensus of opinions confirms my own, I then am glad that I have added my feeble effort to assist in pricking the bubble.

THE USE OF LACTIC ACID IN CHRONIC SUPPURATIVE OTITIS.

Read before the Medical Society of the District of Columbia, March 7, 1888.

BY ISIDOR BERMAN, M.D.,
OF WASHINGTON, D. C.

Among the most troublesome and dangerous affections of the middle-ear we daily meet with, chronic suppuration must be mentioned as requiring our most energetic efforts towards effecting a cure. It is not only the unpleasantness of the mostly offensive discharge, although this is usually the cause of the patient's applying to us, but the actual danger of metastasis, that even when the discharge is flowing freely, always exists, which calls on us to use every means in our power not only to stop the discharge, but also to remove the cause of it. The danger is owing principally to the retention of smaller or larger quantities of pus in the cells of the mastoid process and it is very frequently, especially when the opening in the drum is not large, impossible to remove every particle of pus by syringing. This accumulation gets inspissated in the adjoining cells of the mastoid process and can remain there for years without doing apparently any harm, even while the ear, as far as can be seen by ocular inspection, is kept perfectly clear by syringing or instillations.

It is needless to mention here the different indications and various methods that have been recommended and are constantly in use for these troubles. No doubt a great many of them, as most of us have experienced, especially if the cases come early enough into our hands, are quite effective in arresting the discharge, and we frequently see perforations of the tympanum heal up under their application. It is not to such cases I am alluding to-night, but to those that have resisted every effort of medication and persist in a steady malodorous discharge of a muco-purulent nature. They usually go hand in hand with somewhat larger perforations, and although the hearing may not have suffered to any great extent, give rise to the most unpleasant symptoms.

It must be taken for granted that the cause for this incessant suppuration lies in an affection of

the bone, although usually one can neither see it, nor feel any carious bone with the probe. The specimens of necrotic portions of the middle and internal ear that have been expelled after years of suffering, which even the most skillful medical attention could not allay, are not often seen, and only rarely have we the good fortune to admire the *vis medicatrix nature*, when the patient brings some day a piece of bone to us which he has found after syringing the ear. The majority of such cases end fatally, unless operated on in time.

During my visit in Europe my attention was called to the use of lactic acid in chronic suppurative otitis media, and after my return I resolved to apply it in the first case in which it would be indicated. I did so, and was very agreeably surprised at the rapidity with which I was able to arrest the discharge. It was a case of very long standing, where both ears were affected and where everything possible under the sun had been applied, but in vain. In that first case, as I was not sufficiently acquainted with the effects of such applications, I made the patient come every day, and instilled the diluted lactic acid into both ears, leaving it there from ten to twenty minutes. The offensive odor disappeared completely after the first four days, not to return, and in the course of six weeks every trace of the discharge was gone, and as the drum showed an inclination to heal up, I accelerated this by applications of lapis mitigatus in substance. I afterwards directed the patient how to use the acid at home.

I have not the intention of taking up your valuable time by giving you a complete history of the cases that I have treated with lactic acid. Be it sufficient if I describe the way I found most effective, and assure you that if you will give it a trial in cases where it is indicated you will have every reason to be as satisfied with the results as I was.

On account of the acid macerating the epidermis with which it comes in contact and producing a very unpleasant soreness of the ear, if nothing worse, it is important to protect the meatus auditorius externus from such contact. After trying oil, vaseline, cocoa butter and other fatty compounds in vain, I found that by covering the meatus auditorius externus with a thin lining of paraffine I was enabled to leave even a 30 to 40 per cent. solution twenty minutes in the ear without producing the slightest irritation. It is well to begin with weak solutions and observe how the patients stand them. If the effect is satisfactory one can then go on gradually to stronger solutions of the acid which can be applied, if the patient is intelligent enough, by himself, and must be left at least twenty minutes in the ear. The paraffine must not have too low a melting point, the ear not being very sensitive to moderate heat, and can be applied with a camel's hair brush, care being taken that all those parts of the outer ear with which the acid

comes in contact be well protected. After the discharge is stopped it is not necessary to go on with the lactic acid, but keep the patient under observation, and insufflate boracic acid, finely powdered, from time to time. If the drum shows no inclination to heal up it will usually be found necessary, as well for protection as for improvement of the hearing, to insert artificial drums. Some patients' ears stand them very well and their hearing is much improved by wearing them; others resent a foreign body like that very energetically and respond very quickly with acute inflammation and intense painfulness. In such cases I have found that a layer of boracic acid, finely powdered, applied in such a way that it forms a somewhat thicker kind of artificial drum, is not only stood very well but also improves the hearing to quite a considerable degree.

[A few weeks before this paper appears I saw a lady who had been provided with such a layer of boracic acid to act as artificial drum, about six months ago, and found the boracic acid powder still in place, with a ring of wax developed around it and holding it in position.]

USE OF ANTIPYRIN AND ANTIFEBRIN FOR HEADACHES.

BY J. M. G. CARTER, M.D., Sc.D., Ph.D.,
OF WAUKEGAN, ILL.

For some time now I have been using antipyrin and antifebrin in nervous headaches. My attention was first called to the use of antipyrin in these cases by Prof. Walter S. Haines, M.D. I have found a few cases of sick headache that would yield to this remedy, but generally in persons of nervous temperament. My cases have all been non-febrile. The remedy is prescribed in 5-grain doses every hour until the headache ceases. Often one powder is sufficient, and rarely are more than two or three required.

I have been told that antipyrin has none of its depressing effect upon the heart in non-febrile cases. Such is not my observation. In frail nervous patients, especially in delicate females of nervous temperament, I find that antipyrin does disturb the heart's action, even in 3-gr. and 5-gr. doses. This effect of antipyrin followed notwithstanding the good effect of relieving the headache. To obviate this difficulty was a desirable point to gain and, remembering that there has not been so much complaint against antifebrin, in its disturbance of the heart, as against antipyrin, I determined to try its use. I was much pleased to find that, in cases where the antipyrin cannot be borne, the antifebrin acts admirably. I give the antifebrin in 3-gr. or 5-gr. doses every hour until the headache ceases. Reference to the following five patients will illustrate the varied action of these drugs:

Case 1.—Mrs. A. Delicate health, occasional prostrating nervous headaches, lasting two or three days. Suffers much from neuralgia. Both antipyrin and antifebrin in full doses relieve the headache, but even a single dose of 5 grs. of antipyrin produces distress in the region of the heart, and makes its beat irregular. Antifebrin produces no such feeling.

Case 2.—Mrs. B. Delicate health, but stronger than the preceding. Persistent nervous headaches of two or three days' duration often. Relieved by both remedies. No trouble felt from either.

Case 3. Mrs. C. Has good health; never sick except with nervous headache, which is hereditary and lasts two or three days. No heart trouble from either remedy. Antifebrin makes no perceptible impression. Antipyrin gives almost instant relief. This is the first remedy this lady has found that would diminish her suffering. Nervo-sanguine temperament.

Case 4.—Mrs. D. Usually good health, but often suffers with intense nervous headaches, lasting from twelve to forty-eight hours. Antifebrin produces no beneficial effect. Antipyrin gives relief. Like the preceding, nervo-sanguine temperament. All these patients have borne children.

Case 5.—Miss E. Sister of the preceding patient and of the same temperament. Is somewhat rheumatic, sometimes having slight muscular rheumatism, especially intercostal rheumatism. Often suffers with excruciating nervous headache. Has never used antipyrin. Antifebrin acts quickly.

The return of the headache in none of these cases can be traced to the menses, and they have no regular periodicity.

LAPAROTOMY FOR THE REMOVAL OF A FIBRO-MYOMA.

Read before the Medical Society of the District of Columbia, March 21, 1888.

BY P. J. MURPHY, M.D.,
OF WASHINGTON, D. C.

Nellie B., white, single, æt. 26, was admitted to the Columbia Hospital for Women November 11, 1887. Previous to the summer of 1886 she had good health. At that time noticed a swelling in right side which gradually increased and troubled her a great deal. Menses have recurred regularly, lasting from four to seven days, without pain. At time of admission complained of being restless at night, of frequent smothering sensations and severe headaches. No trouble in voiding urine. Appetite and general condition good. Examination November 12 revealed a hard pear-shaped tumor of about the size of a head of a child 2 years old, extending from the brim of the pelvis upward nearly to the umbilicus, and freely movable laterally. By vagino-abdominal examination the uterus seemed to be slightly connected with the growth; cervix uteri somewhat shortened

and soft. Diagnosis of a fibro-cyst of the uterus was made. Menstruated November 19 to 28; flow profuse but not alarming. On December 1 was examined under ether and the growth was found to be freely movable in every direction except upward, and now quite reached the umbilicus. Body of uterus seemed to be displaced forward and to the right side and somewhat enlarged and hard. Some glairy mucus in cervical canal.

At a consultation of the Advisory Board of the hospital December 3 no definite conclusion was reached. From December 28 to February 22 electricity was applied daily (except during menstruation), about ten cells of a McIntosh galvanic battery being used, which gave as strong a current as the patient could bear without pain or too rigid contraction of abdominal muscles. Although the battery was faithfully tried the growth gradually increased, and at the time when electric treatment was suspended it reached a point about 2 inches above the umbilicus. Patient was discouraged with electricity and requested that the growth be removed by operation. At a second consultation of the Advisory Board February 29 it was decided to operate. Laparotomy was performed in the presence of Drs. Morgan and Head, of the Advisory Board, Dr. Linthicum, of Maryland, who formerly attended the patient, and Drs. Boyce and Sweetman, of house staff. An incision about 5 inches long was made in the median line midway between the umbilicus and symphysis pubis. When the growth was reached a number of large blood-vessels were seen upon its surface. It now seemed to be a continuation of uterus upwards, no line of junction being noticeable. A few smaller but harder growths were attached near the vaginal roof; one of which had probably been mistaken for the displaced uterus. Some of the gentlemen present felt the growth and thought that its contents were fluid. A trocar was inserted, but no fluid escaped. The incision was extended 2 inches upward to allow extraction of the tumor. When drawn out of the cavity it was found to embrace the uterus on every side, and its removal was agreed to.

MEDICAL PROGRESS.

METHYLENE AS AN ANÆSTHETIC.—DR. WM. H. DAY says that it is a mystery to him that an anæsthetic so safe and effectual as methylene should not have been more generally employed by the profession. A few deaths have been imputed to it, it is true, and occasional deaths will occur from any anæsthetic, however carefully administered, but notwithstanding, I think, methylene occupies in point of safety a first-class position. Some years ago the late Mr. Peter Squire asked me whether I considered methylene pos-

sessed any advantages over chloroform, and I replied in the following words, which will be found in his *Companion to the British Pharmacopæia*: "It is less likely to cause vomiting, it is more agreeable to inhale, and there is less excitement preparatory to the state of anæsthesia; rarely more than 3 or 4 drachms are required for an operation lasting half an hour, and consciousness returns in a few seconds after inhalation is discontinued." My conviction of these merits remains unshaken.

In abdominal tumors of long standing, with a large quantity of peritoneal fluid, the diaphragm is pressed upwards, and the lower lobes of the lungs are so compressed that very little breathing space is left, and hence the danger of suffocation if the anæsthetic is not given sparingly and slowly. Slow administration is in itself a safeguard. In such cases the shoulders of the patient require to be well elevated, and the mask of the apparatus not brought so near the mouth as to exclude the free admission of atmospheric air into the lungs. In these cases of pulmonary oppression the patient may become livid after a few inhalations, and be seized with a convulsive, choking cough, which embarrasses the operator, but as the ascitic fluid escapes, and the tumor is removed, freer respiration is established, and then the remedy can be pushed to full narcotism, more particularly when the abdominal distension is of recent date. It is in disregard of this warning that fatal consequences may result. When the abdomen is distended with 15 or 16 quarts of fluid, and contains a multilocular cyst weighing 8 or 9 lbs. in addition, the umbilicus may reach a higher level than the nose of the patient as she lies on the operating table. In such a case slow and cautious administration is demanded, and as I have said, some of the fluid must be withdrawn before the patient can take a full inspiration. At this stage we cannot push the methylene beyond partial anæsthesia.

When mucus accumulates in the mouth, I am in the habit of twisting one end of a pocket-handkerchief round the forefinger of the right hand, and wiping it away. This simple practice prevents the mucus from collecting at the back of the pharynx, whilst it facilitates respiration, and prevents the choking cough.

When the pulmonary organs have been long pressed upon, or the heart displaced, bronchial irritation sometimes comes on a few days after operation, as the lungs undergo expansion, and the pressure is removed. This is all the more likely if a considerable quantity of the anæsthetic has been administered. Such complications are rare in recent abdominal distension, but in old standing cases, where the lower ribs are bulged outwards like a fan, this risk is frequent and ought to be calculated upon. In these cases the heart becomes weak; it is often displaced upwards, and prone to take on degenerative change.

As to the existence of a cardiac murmur, undue importance may be attached to it. It is not always easy to diagnose a functional from an organic murmur, but where the pulmonary circulation is free, I never hesitate to recommend methylene as an anæsthetic. The pressure resulting from a large abdominal tumor may give rise to a soft cardiac murmur, which means nothing at all, if the muscular structure of the heart is vigorous enough to overcome any distension of its cavities, but we must not overlook the fact that long-standing upward pressure tends to invite feebleness of the heart's action, thin walls, and degenerative changes. Sudden death at the time of operation, or soon after it, has to be reckoned with.

I have safely given bichloride of methylene to patients suffering from heart disease on many occasions; in dilatation and weakness of the organ, and in mitral change with hypertrophy. When there has been considerable distension of the right and left cavities of the heart from valvular defects I have never hesitated to use methylene if an operation has been urgent, even if the cardiac trouble has considerably impaired the pulmonary circulation. I am doubtful whether there is any other anæsthetic to supersede methylene in this condition. I have ascertained, before commencing the administration, that the heart was weak, or its valves damaged, and yet, in spite of this, the pulse has frequently improved in quality, to the surprise of bystanders, and the patient has looked a far better color at the close of a tedious operation than at the commencement. The bichloride has acted as a cardiac stimulant throughout. Exceptions are sometimes met with, and in these cases I invariably resort to brandy during the administration, never pushing the methylene to such an extent as to interfere with swallowing. I have given, during a long and desperate operation, as much as 6 ozs. of brandy, and I am convinced that this precautionary measure has carried the patient safely through. I never trouble myself about the pulse; the countenance and the respiration are my guides. No hard-and-fast lines can be drawn. One patient can be sent into tranquil sleep with 3 drachms for half an hour, and a very exceptional case will require three times the quantity. Twelve drachms is the largest quantity I have ever given for an operation lasting one hour, and I have no remembrance of Sir Spencer Wells being a longer time than this over his worst operations.

I have known many cases of pleuritic effusion in ovarian disease, and when recent and serous I have advised the abdominal section before tapping the thorax, and in every such case where there has been enough breathing space left I have not been anxious. The effused fluid has disappeared from the chest without operative interference.

I have administered methylene with the best effects in cases of advanced phthisis with a large

cavity in one lung, and softening going on in the other. I do not think I have overestimated the value of methylene, as in 1,230 cases I have not met with anything to alarm me. It is the most harmless of anæsthetics; it has never disappointed me, and I feel sure that those who will give it a fair trial will record a similar experience to my own.

It is not in healthy individuals that danger is to be apprehended from the employment of an anæsthetic. It is in the diseased and feeble, who have been reduced by pain, sleepless nights, and long suffering. In such cases as these Dr. Frederic Hewitt advocates the anhydrous ethylic ether, or the A. C. E. mixture. — *Brit. Med. Journal*, July 14, 1888.

A CASE OF CANCER OF THE LARYNX; CONSIDERATIONS ON LARYNGECTOMY.—At the meeting of the French Society of Otology and Laryngology, Dr. CHARAZAN reported an interesting case of cancer of the larynx. The patient, æt. 60, presented October 1, 1887, the following state: nothing of syphilis, general state of health excellent, easy respiration, cough and expectoration absent; strong-smelling breath, but not fetid. Aphonia present during eighteen months. On examination with the laryngoscopic mirror he found congestion of the epiglottis and of the left side of the larynx; the ordinary symptoms, in fact, of chronic laryngitis. To the right, at the level of the vocal cord, could be seen a grayish ulceration tolerably deep, occupying the centre of a tumefaction which closed the half of the glottis.

Dr. Charazan diagnosticated the case as cancer of the larynx. The progress of the disease, in spite of energetic antisyphilitic treatment, confirmed this diagnosis, and on February 19, 1888, tracheotomy became necessary to prevent asphyxia. Extirpation of the larynx was proposed but was not accepted by the patient.

Touching this case Dr. Charazan compares the results obtained by palliative tracheotomy to those given by extirpation of the larynx in the cancer. At first tracheotomy appears preferable, as it enables the patient to live six or eight months longer, whereas in extirpation of the larynx two-thirds of the patients succumb to the operation or to a rapid recurrence of the disease. But if the statistics are so unfavorable it depends (according to the author) on the fact that surgeons have not always paid sufficient attention to the indications furnished by the state of the patient and by the nature of the disease. All cases of cancer of the larynx should not be operated on. Extirpation should be performed only in the case of cancer chiefly limited to the interior of the vocal organ, while the general condition of the patient is yet good, and when the glands are not yet involved.

Partial extirpation gives better results than those furnished by complete laryngectomy, whence

the necessity of early diagnosis, easy to make in many cases. If these considerations are borne in mind the number of successes obtained by extirpation will doubtless go on increasing.—*Revue Mensuelle de Laryngologie*, June 1, 1888.

EFFECTS OF WET AND DRY PACKING.—DR. GRITSAL, of St. Petersburg, has prosecuted a series of observations on the effects of wet and dry packs followed by vigorous rubbing on a number of healthy hospital attendants. The number of cardiac contractions fell slightly after the application of both kinds of packs—generally speaking, to the extent of six beats per minute after the wet and three beats per minute after the dry packs. The blood pressure, taken by Basch's sphygmomanometer, rose on the average 8 millimetres after the wet packs, and fell 5 millimetres after the dry ones. The inspiratory and expiratory force, taken by Waldenburg's pneumatometer, increased nearly twice as much with the wet as with the dry packs. The muscular force increased after the wet packs, and very slightly decreased after the dry ones. The temperature in the rectum and in the axilla diminished; the rectal temperature was the more affected by the dry pack, falling 0.15° C. after the wet pack, and after the dry 0.27° C. The temperature in the axilla, on the other hand, was the more affected by the wet pack, which caused it to fall 0.18° C., while the dry pack only caused a fall of 0.07° C. The surface temperature, taken by Innisch's thermometer, fell in both classes of experiment; *e. g.*, that of the chest fell 0.48° and that of the thigh 0.6° C. after wet packing, the dry pack producing a smaller fall in both cases—*viz.*: 0.24° on the chest and 0.2° on the thigh.—*The Lancet*, July 21, 1888.

METHYLAL AND ITS USE IN DELIRIUM TREMENS.—DR. B. W. RICHARDSON states that methylal is not really a new drug, because he introduced it himself in 1868. Its medicinal qualities are: 1. It is hypnotic and antispasmodic. 2. Its action lies between ethylic alcohol and ethylic ether. 3. It can be administered by inhalation, by hypodermic injection, and by the mouth in aqueous solution. 4. It reduces arterial tension, and by local action excites glandular activity. 5. The sleep it induces is not profound unless the dose be excessive. It is quickly eliminated, and leaves no serious effects. It causes no vomiting nor stomachic disturbance. 6. It combines with ether, alcohol, amyl nitrite, and many other remedies, with which it acts in concert, while it equalizes their action by reason of its own solubility. 7. It promises to yield a safe and effective anæsthetic mixture in combination with ether. As a therapeutic agent, the author has often prescribed methylal in doses of one to four drachms in the treatment of spasmodic and painful affections, such as asthma, angina pectoris, colic, and tetanus.

Recently methylal has been brought forward as a substitute for alcohol in the treatment of delirium tremens. In this way it is used hypodermically, and is said to act favorably as an anodyne and hypnotic. This drug, if required perfectly pure, is very expensive; that generally sold in the market at a low price is very inferior in quality, and contains acetone in free quantities, and the results obtained from its use are very different from those Dr. Richardson observed in his experiments.—*Asclepiad*, May, 1888.

IODOFORM IN HÆMOPTYSIS.—The difficulty of finding any successful method of checking hæmoptysis in tuberculous cases has led to the trial of many remedies. MM. Chauvin and Jorissenne, of Liège, publish a short account of the results of the administration of iodoform, at first along with tannin, afterwards by itself. In the first six cases pills were given containing iodoform $\frac{3}{4}$ gr. and tannin $1\frac{1}{2}$ gr. Sometimes the hæmoptysis stopped after two of these had been taken; in one severe case of advanced phthisis as many as five were given *per diem* for three days before the bleeding ceased. In another patient, who had been in the habit of having eight or ten attacks of hæmoptysis in the year, which had been treated by large amounts of ergotine and morphine, three of the iodoform and tannin pills stopped the hæmoptysis four months ago; and there has been no recurrence since. In the three cases recorded in detail, in which the iodoform alone was used, the results were very similar. The authors came to the conclusion that gr. ij. of iodoform *per diem* in three pills was an appropriate dose for moderately severe cases, and that more than eight or nine pills was not required in any case they had to deal with. This action they consider quicker than that of ergotine and therefore more useful. In all the cases during the past year in which they have given it there has been no relapse, and during the treatment no disturbance of digestion.—*Progrès Méd.*, May 19, 1888.—*Practitioner*, July, 1888.

ARTIFICIAL GLYCOSURIA PRODUCED BY THE SALICYLATES.—It is well known that the urine of patients under full doses of salicylic acid or the salicylates will often exhibit the reaction for sugar by Böttger's, Trommer's and other tests, but until recently the reducing agent was thought to be salicylic acid or one of the products of its decomposition. It has lately been shown that such urine will ferment with yeast, losing several degrees of specific gravity, and that the presence of sugar and its amount can be shown by accurate quantitative methods. Burton (*Lancet*) recently examined the urines of twelve persons who were taking large doses of salicylic acid, sodium or phenol salicylate, and invariably found sugar present, though often in very small amounts—the largest being gr. vj to the $\frac{3}{4}$ j. The

glycosuria, which is temporary, he surmises results through the action of salicylic acid on the diabetic centre, and that the benefit obtained by its administration in some cases of diabetes may be due to the opposite action of small and large doses.—*The Polyclinic*, July, 1888.

THE TREATMENT OF CHRONIC DIARRHŒA BY TALC.—The means at present employed in the treatment of chronic diarrhœas are as inadequate as they are numerous. DR. DEBOVE administered talc, in an impalpable powder, as being inert and not liable to undergo changes in contact with the intestinal secretions. He has given it in doses of seven to twenty ounces daily mixed with milk. In cases of diarrhœa due to tuberculous lesions of the intestines the treatment was uniformly successful, the diarrhœa being followed by an obstinate constipation. Curiously enough, he found that while giving the powdered talc patients tolerated substances which before they had been quite unable to retain. Milk, for example, which invariably gave rise to drastic purging, was given without setting up any disagreeable feelings. He has even been able to give a pound of oil within the twenty-four hours, and thus materially contribute to the nutrition of the patient. So far he has not tried the remedy in the diarrhœa of hot climates nor in children.—*The London Medical Recorder*, July 20, 1888.

THE OPERATIVE TREATMENT OF PRIAPISM.—DR. VORSTER, of Berlin, reports two cases of priapism relieved by operative interference. In the first case the patient suffered from nervous symptoms following a hæmorrhage (hæmophilia). The priapism followed a difficult fecal evacuation. The symptoms persisted for days, giving rise to atrophic paraphimosis (Rose). Incision of the preputium penis here relieved symptoms. In the second case a traumatism of the urethra with hæmatoma resulted from the kick of a horse. Here the blood tumor compressing the corpus cavernosum penis, and preventing venous return, favored the persistence of priapism. External urethrotomy, incision of the blood tumor (projecting into the lumen of the urethra), and emptying the hæmatoma of clots, relieved symptoms.—*Zeitschr. f. Chir.*, Bd. 27, Hft. 1 and 2. *Annals of Surgery*, July, 1888.

ANTISEPTIC SOAP.—PROF. AUGUSTE NEVERDIN recommends the following formula for the manufacture of a reliable antiseptic soap: Sweet oil of almonds, 72 parts; soda lye, 24 parts; potash lye, 12 parts; sulpho-carbolate of zinc, 2 parts; essential oil of roses, 9.5 parts.

IN CILIARY BLEPHARITIS, DR. GILLET DE GRANDMONT uses a preparation containing 1 per cent. of the iodo-chloride of mercury in pure vaseline. Apply morning and evening.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, AUGUST 11, 1888.

THE TARIFF ON INSTRUMENTS, BOOKS, AND
DRUGS.

The New York Neurological Society has refused to indorse the resolution of the Georgia Medical Society requesting the removal of the tariff on medical books, surgical instruments, and drugs. As the Neurological Society contains a large number of believers in tariff reduction, their action must have been dictated by the best interests of the profession. It is easy to see on what grounds they opposed this resolution, originally offered as a piece of buncombe merely. While a tax remains on the raw material the removal of the tariff on instruments discriminates against the American instrument-maker, and must ultimately raise the price of instruments. Furthermore, under existing circumstances, a surgeon who desires an instrument can have it made by a maker at his door. If the tariff on instruments be swept away without removing the tariff on raw material, the instrument-maker's trade is destroyed, and the surgeon must import his instruments. The fact that the members of the New York Society are greater importers of books and instruments than those of the Georgia Medical Society, renders their action peculiarly significant.—*Medical Standard*.

As off-setting this action of the New York Neurological Society, the Medical Society of the County of New York passed resolutions urging upon Congress the repeal of the import duty on

medicines, medical and surgical appliances, and everything used in the treatment and diagnosis of disease. Attention was called to this action of the Medical Society of the County of New York in THE JOURNAL of April 7, though the *Medical Standard* seems to have found it convenient to overlook what the larger and more important Society, composed of general practitioners as well as specialists, has done. While the *Standard* claims that it is easy to see on what grounds the Neurological Society opposed the resolution of the Georgia State Medical Society, it, however, has failed to see what is so visible. The N. Y. Neurological Society took the ground, when it refused to endorse the resolutions of the Georgia Society, that the charges against native instrument-makers were too intemperate and sweeping. The Neurological Society said nothing about "discrimination against the American instrument-maker." Nor did the Neurological Society advance the entirely original and very unique opinion that the removal of the tariff on instruments would "ultimately raise the price of instruments."

When the *Medical Standard* says that the resolutions of the Georgia Medical Society were "originally offered as a piece of buncombe merely," it offers a gratuitous, unmerited, and entirely uncalled for insult to a scientific body of gentlemen whose time and lives are being spent in the interests of humanity. As medical men what have we to do with the instrument-makers' trade as compared with the health, comfort, and lives of sick people? Admitting that the members of the Neurological Society import more books and instruments than those of the Georgia Medical Society, do they import more than the members of the New York County Medical Society? Again, if the action of the Neurological Society "must have been dictated by the best interests of the profession," why did the members reject that portion of the resolutions referring to books and drugs, because the charges against instrument-makers were too intemperate and sweeping? Instrument-makers do not import drugs and books.

In this connection we beg to call attention to the following, from the *Medical Record* of July 28: In a speech on tariff reform delivered by Hon. Ashbel P. Fitch, of New York, a letter was read from a New York pathologist, in which he said, among other things: "For my microscope I sent to Jena, where are made the best instruments for

my work. At the factory it cost \$94; to get it out of the custom-house 40 per cent. more. Later I sent for an oil immersion lens, and paid \$80 at the factory, 40 per cent. more at the custom-house. Hermann Katsch, of Berlin, makes an instrument called a microtome, for cutting infinitely thin sections or shavings from the surface of a piece of an organ of the body, hardened in alcohol. Herr Katsch is the only man in the world who makes this particular variety of the instrument. To prepare a section thin enough for careful study under the high powers of the microscope this mechanism is necessary. To get this microtome from the custom-house I had to wait two weeks and pay a duty of 40 per cent. on its factory price. The celebrated Dr. Koch, of Berlin, published a report of the cholera commission, conducted under the auspices of the Government. At most, twenty men in this country could require this work, and they must needs pay 25 per cent. duty to get it from the custom-house after paying its publisher's price and freight.¹ What use could this report be to these scientists? To aid them in maturing methods of recognizing the disease when it appeared on shipboard in our harbors; to devise means to suppress it; to protect the country. It was to the expert work of one such scientist that the city of New York must give its gratitude that a certain steamship just developing cholera among its steerage passengers was detained at quarantine and the city escaped overwhelming infection. For Koch's report he paid 25 per cent. duty, and never received anything from the city or Government. When we look up from our laboratory tables, microscopes, microtomes, and alcohol—taxed to suffocation—and read in the papers of the United States Treasury filled to suffocation, we reflect that our scientific work takes much time, brings no money return, increases our outgoes, and has not even the encouragement of the Government nor laity."

THE TREATMENT BY EXCISION OF MASSES OF SCROFULOUS GLANDS.

While scrofulous glands do not, as a rule, attain a large size, and generally suppurate within reasonable limits as to dimensions, discharging externally either spontaneously or from surgical interference, they occasionally continue to grow,

become the seats of deposits, infect one another, and gradually increase in size until they form large masses, of a pound or more in weight. These large masses interfere with the circulation, and by pressure on the trachea sometimes also with respiration. When left to nature these cases tend to a fatal termination, and the only method of dealing with them satisfactorily, says Mr. WM. KNIGHT TREVES, or with benefit to the patient, is by excision. "For many years," he says, "I left such cases alone, trying for months, and even years, every drug treatment that has ever been recommended, without in any instance, witnessing a favorable result. In fact, anyone who has seen a number of these glands after they have been excised and cut open will readily appreciate the futility of drugs in such cases."

In the *Lancet* of July 21, Mr. Treves records 9 cases of enlarged and indurated glands treated by excision, and with good results in all the cases. Some of the cases had been going on for six, seven, or eight years, and had attained considerable size. Since there is a uniform want of success in the treatment of such enlarged glands by any other than surgical measures, is it not best that glandular swellings be treated as any other tumors or morbid growths, and be excised or scooped if found to be not amenable to other treatment within a reasonable time? A large proportion of these glands, and perhaps all of them in a given case are found to contain masses of caseated material; these masses are extravascular, are thrown out from the tissues, and are no more likely to be affected by drugs than a loose sequestrum, says Mr. Treves. He has tried the plan of excising such portions as were softening, and scooping out the contents, but this plan was found to be no better than the expectant one, and entailed a number of openings, a number of suppurating cavities that could not readily contract and heal on account of their surroundings and condition. It has been found, too, that after excising and scooping some of the glands, others that have not previously softened gradually break down, the cellular tissue inflames and becomes brawny, hectic continues, and the patient may die, worn out by the chronic blood-poisoning or from pulmonary or other complications.

For enlargements of moderate size scooping with good drainage may answer very well, but not for the cases of very large glands. Limited scooping

¹ Amounting in all to \$11.00.—Editor THE JOURNAL.

may be combined with excision in some cases, as when after excising a mass, a broken-down gland may be found deeply and immovably fixed; this may be advantageously scooped. The large masses generally extend into the deeper parts of the neck, lying under the sterno-mastoid and on the deep vessels. In many cases the capsules of these glands are dense and tough, they lie deeply among the vessels, and to incise them for the purpose of scooping without previously exposing them by dissection is a more dangerous procedure than to remove them. The deep glands seldom approach the surface by suppuration. When left alone the best that can be hoped for is, that they may undergo calcareous degeneration. But meanwhile the patient is kept in bad health, and the glands may extend and cause other and more serious complications. At the Margate Infirmary Mr. Treves has excised such glandular swellings for many years, and without meeting a fatal result. Their removal requires time, care and patience, but is not very difficult.

As regards the operation, Mr. Treves gives the following useful hints: The entire removal should be effected by dissection alone; no directors, handles of scalpels, or fingers should be used to separate the glands from the surrounding cellular tissue. Cut down on the surface of the mass, dissecting the cellular tissue as closely off the capsule as a nerve is cleaned in the dissecting room. Cut always on the capsule, and never allow the knife to stray from its surface. When sufficient of the anterior surface is exposed, pass a thick thread through the gland, draw it gently forward, and, continuing the dissection, get gradually to the back of the gland, removing thus portions of the mass at a time, each portion comprising perhaps one gland, perhaps several closely connected with each other. In this way the mass is gradually removed. If the plan of cutting on the capsule is strictly adhered to, it is not easy to divide any vessel of importance without doing so intentionally; whilst, if it is not followed, the jugular vein will probably be incised, as the deep glands lie along and are more or less adherent to its sheath. I have several times had to divide the external jugular vein and twice the sterno-mastoid muscle, but as a rule, the glands can be pushed or pulled from underneath this muscle. In none of the cases has there been any serious hæmorrhage, and all the

cases operated on have recovered. In one of the cases I accidentally opened the internal jugular vein; it was tied above, below, and at the point of incision, and no evil result followed.

"As regards treatment of the wound, anything like retention of blood, serous oozing, or discharge is attended with such serious consequences that latterly I have not ventured to suture the skin flaps, except, perhaps, a single stitch to keep them in proper line. If the flaps are sewn together, hollows must be left underneath in the space the gland tumor has come from. I have also found irritation set up by drainage tubes. I have preferred, therefore, to let the flaps adapt themselves to the tissues underneath, supporting them by pads of antiseptic cotton. Strict antiseptic precautions are used in the dressings. The patient, when put to bed, has his head and neck fixed by sand-bags; he is not allowed to move or talk, and is fed entirely on liquid nourishment so as to avoid the movements of mastication. I have found, as might have been expected, that the tissues of the neck have great healing power, but are equally prone to inflammation from the irritation of tubes or from the slightest obstruction to the free exit of discharge. In fact, it is a part which is powerful alike for good or for evil. A drainage tube may safely and with advantage be passed into the hollow capsule of a gland after scooping, but it does not rest easily if laid among the deep cellular tissue of the neck."

PRACTICAL ASPECTS OF DISINFECTION.

Practical disinfection is a subject to which much attention is given by European city health authorities. In America, while considerable attention has been given to practical disinfection in some places, there is far too little practical work done. In the minds of many people disinfection means only the placing of Condyl's Fluid, or of carbolic acid solution or powder about the rooms in saucers, or sprinkling deodorants about the place to be disinfected. According as we wish to secure disinfection of infected clothing or bedding, to render infectious discharges harmless, or to purify the interior of an infected room, we must select a different method of disinfection. DR. D. S. DAVIES, Medical Officer of the City and County and Port of Bristol, has recently given some useful advice on the practical aspects of disinfection,

in a paper published in the *Bristol Medico-Chirurgical Journal*, June, 1888.

For the disinfection of infected clothing or bedding, superheated steam is at once expeditious and reliable. The apparatus used by the Bristol Sanitary Authority is a steam disinfector, with an internal capacity large enough to contain any sized mattress, and is surrounded by a steam jacket, which admits of superheating and thus drying the steam in the central chamber. Steam is supplied from a separate boiler. It takes only about an hour to get the machine into working order, and a roomful of bedding and clothing can be disinfected in another hour. The machine works so rapidly that more than 10,000 articles have been disinfected thoroughly during the first three months of 1888; with the two gas-heated dry-air disinfectors in use in Bristol previous to 1887 this would have been impossible.

Assuming that home-nursing of smallpox is inadmissible under ordinary circumstances, how should the infected linen be dealt with during the contact of a sick case at home—say one of scarlatina? The linen need only be boiled to ensure complete disinfection. But as a rule it cannot be boiled immediately, and while it is awaiting this it should be steeped either in a solution of corrosive sublimate, 1:1000, or in carbolic acid solution, 2 per cent., or thymol, 1:1000. The articles should be kept continuously wet until placed in the boiling water. Other than this no other process can be carried out at home except destruction by fire. Fumigation by sulphur or chlorine vapor, says Dr. Davies, is worse than inefficient, because it tends to promote a false sense of security.

When infectious excretions or discharges are to be dealt with the use of chemical disinfectants in solution is especially indicated. It is particularly necessary in such cases that all discharges be at once received into, well mixed with, and covered by chemicals of sufficient strength. Probably the most suitable solution is an equal bulk of corrosive sublimate solution, 1:1000. After this the discharges may be disposed of as usual.

While an infectious disease continues in a house all drain and waste pipes should be kept flushed with chemicals; but such chemicals should not be trusted to cover or remove drain-smells in a house or in the street. These smells point to defective construction, and reconstruction alone will suffice to remove the danger. While the public sewers

should be so constructed as to carry off the sewage immediately to a safe point of discharge, and thus prevent putrefaction, it will be useful in time of epidemic to disinfect them systematically with chemicals.

Gaseous disinfection, which is generally most convenient for the disinfection of room-spaces, Dr. Davies has found unsatisfactory as to results. Chlorine and bromine, while more effectual than sulphurous acid, can be relied upon to destroy fully-exposed organisms only, and to secure full efficiency the air should be simultaneously saturated with watery vapor. "Dependence upon these gaseous agents for the disinfection of clothes, blankets, and similar articles is obviously fraught with extreme danger; and yet in many populous districts the local authorities responsible for the public health have no more certain means of disinfecting such articles. When we consider that the desquamative periods of many infectious diseases, notably smallpox and scarlet fever, are periods of extreme danger, during which infective material is given off with the dried epithelial scales in a readily portable form, and during which bedding and clothes become loaded with such infectious particles; and when we further remember that this desquamation of infectious particles takes place similarly in the mildest as in the most severe cases, it becomes at once obvious that efficient means for disinfection of such articles by hot air or steam is a first necessity, and that where such efficient means are not available, contagion is likely to be largely carried by means of "fomites"—a fact that especially applies in cases where one of these diseases has been nursed for any length of time at home." Dr. Davies has now discarded chlorine on account of its very destructive action, and with sulphur for disinfecting empty room-spaces he has had uniform success. The room should be made as air-tight as possible, a large proportion of sulphur should be burned, and the operation should be continued for some time. Thorough scrubbing and ventilation are then secured, and if the patient has been nursed at home, the rooms are, when possible, re-plastered and re-papered.

It should be remembered also that in the desquamative diseases inunction with vaseline or oil, to which camphor, carbolic acid or thymol may be added, is an important measure, and if the surface of the patient's body be kept constantly moist

in this manner there is much less likelihood of contamination of the air by infectious particles. Or a wet sheet, saturated and kept moist with carbolic acid solution, preferably mixed with glycerine, may be used in such cases.

REFLEXES FROM INTESTINAL IRRITATION.

There are few subjects in medicine more interesting than the study of abnormal reflexes. Some authors have gone so far as to deny that there is any such thing as paralysis due to reflex mechanism; that the cases of paralysis of which amaurosis from affections of the fifth nerve, and paralysis of the orbital nerve from like cause, are examples, may be explained without reflex mechanism; and that there is no true conception of the manner in which reflex paralysis is brought about, unless we understand that it is produced by inhibitory influence, and that reflex paralysis, if it have any meaning, must be inhibitory paralysis. They that go so far as this deny the necessity of admitting inhibitory paralysis.

Among the various causes of reflex disturbances intestinal irritation is known to play an important part. Cases of paralysis of the arm from gingival and intestinal irritation, of hemiplegia from intestinal irritation, of aphasia from the same cause, and of other disturbances from irritation of the alimentary tract, while not common, are by no means unknown. Such cases have been reported by Kennedy, Gomez Torres, Fränkel, Corbett, McKendrick, Moll, Molard, Fox, Eggleston and others. McKendrick's case was that of a woman that had suffered for seven months from a partial paralysis of the lower limbs; she passed a tape-worm nearly twenty-two feet long, and within four days had completely regained the use of her limbs. Fuller reported the case of a boy who had paralysis first of the right and then of the left leg, and recovered after a dose of santonine, which brought away a large number of dead lumbricoid worms. Moll's case was that of a woman who suffered for three months from paralysis of the upper extremities, and recovered after the expulsion of a tape-worm. Eggleston's case was that of a case of reflex paraplegia and aphasia from tape-worm, the child recovering after the expulsion of the worm.

From a record of cases carefully tabulated and extending over a number of years, Mr. Jabez

Hogg finds that strabismus in young children is more frequently due to the irritation of intestinal worms than is generally supposed, and he reports (*British Medical Journal*, July 21, 1888) a case of amaurosis and strabismus from *ascaris lumbricoides*. It is certainly very uncommon to find reflex amaurosis and strabismus associated in the same person, and arising from the same cause—the presence of worms in the intestines. An equally interesting feature in this case was the presence in the patient, a little girl of barely three years, of three kinds of entozoa: oxyurides, tænia, and *ascaris lumbricoides*, for it has been held that these three kinds of worms will not exist together. Mr. Hogg removed the parasites by means of anthelmintics, beginning with scammony and jalap, which brought away a large number of ascarides. Filix mas removed the tape-worm, and santonin followed by castor oil brought away several large lumbrici. The patient began to recover her sight, the strabismus has entirely disappeared, and at the time of the report the general health, which had been greatly impaired, was much changed for the better.

EDITORIAL NOTES.

AN ARMY MEDICAL BOARD will be convened in New York City, New York, October 1, 1888, for the examination of such persons as may be properly invited to present themselves before it as candidates for appointment in the Medical Corps of the Army. Application for an invitation should be addressed to the Secretary of War, stating date and place of birth, place and State of permanent residence, and accompanied by certificates, based on personal acquaintance, from at least two persons of repute, as to citizenship, character, and moral habits; testimonials as to professional standing, from the Professors of the medical college from which the applicant graduated, are also desirable. The candidate must be between 21 and 28 years of age, and a graduate from a regular medical college, evidence of which, his diploma, must be submitted to the Board. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

SUPPOSED ICE-CREAM POISONING.—At the annual banquet of the alumni of Marietta College, Ohio, held in the latter part of June, a number of

persons were made ill after eating ice-cream. Five persons have since died, the last one on August 6, and another is still dangerously ill. It is said that the cause of the sickness will probably be investigated, though it seems rather late to begin now.

BULGARIA, according to Dr. J. Bradel, of Sophia, has now a well organized sanitary service. There is one chemical laboratory, in which the work is almost exclusively medico-legal and sanitary. The medical officers of health have, among other duties, that of inspecting animals intended for food, and of investigating any complaint against a seller of food articles.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its first annual meeting at Birmingham, Ala., on September 11, 12, and 13, 1888. The programme of the meeting may be found in the department of miscellaneous items in this week's issue.

THE AMERICAN ASSOCIATION OF OBSTRETRICIANS AND GYNECOLOGISTS will hold its first annual meeting at Washington, D. C., on Sept. 18, 19, and 20, 1888. The programme for the meeting will be found in another department.

AMERICAN MEDICAL ASSOCIATION.

Report of the Sub-Committee on Infant Feeding.

Made at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

Your Sub-Committee on Infant Feeding respectfully reports that it has only had the subject under consideration for about two months, and during this time it has opened correspondence with some of the leading authorities both in this country and in Europe upon the very important questions submitted to it, especially with reference to the proper diet of infants. Though not prepared to make a final report upon the subject at present, it believes that some facts have been elicited which are valuable; and which are of sufficient interest to bring before this Association.

Thus far, replies have been received from Dr. Eustace Smith, of London; Dr. J. Lewis Smith, of New York; Dr. Victor C. Vaughan, of Ann Arbor, Mich.; Dr. Geo. H. Rohé, of Baltimore; Dr. F. Forchliemer, of Cincinnati; and others, to whom we desire to return thanks for their assistance and courtesy. (The correspondence and re-

plies to queries submitted are appended to this report.)

The leading facts thus far may be very briefly stated as follows:

1. In the case of an infant, or a child under ten months of age, deprived of breast-milk, the artificial substitute provided should be made to correspond with human milk as closely as possible, both in its chemical constitution and its physical characters.

2. Fresh, unadulterated cow's milk, when properly prepared, is an acceptable substitute for cow's milk. But since the casein of cow's milk coagulates in a heavy, dense mass, while breast-milk curd is light and flocculent, some expedient must be resorted to in order to make the former resemble the latter, so that the digestive powers of the infant shall not be unduly taxed. The casein of cow's milk, according to Dr. Eustace Smith, as the rule, traverses the infant's alimentary tract and may be found unchanged in the fecal discharges. It is, therefore, a constant source of irritation, and often gives rise to diarrhoea and enterocolitis. One of the most decided advances in dietetics in modern times, is the preparation of cow's milk with the aid of digestive agents, as in the method recommended by Professor Frankland. In this method the casein of a portion of the milk is first peptonized by fresh calf's rennet, and to this is added a portion of fresh milk, after heat has been applied to check the process and to prevent complete predigestion; some milk sugar is finally added, and thus a mixture is obtained which closely approximates human milk in its chemical composition. It has, moreover, been found to serve as an efficient substitute where the mother's milk is of poor quality, is inadequate in quantity, or is entirely wanting. The special feature of this method is the peptonizing of only a part of the casein, with the employment of heat at a certain stage to arrest the process so that the food shall not be completely digested. The addition of the carbo-hydrate (milk sugar, in this case) is necessary, in order that the food shall closely resemble human milk. The employment of stale, foul smelling, partially decomposed digestive ferments, for the purpose of preparing cow's milk for infant's food is condemned. The necessary skill and intelligence required to insure uniformity of results for the extemporaneous peptonizing of milk is rarely to be found in the household, and where this process is adopted, the experiment often turns out to be unfortunate and injurious to the child.

3. As a rule, raw starch is inadmissible in the diet of young infants, because the digestive powers of the infant are rarely sufficiently active to convert crude starch into a soluble form. The plan advocated by some, of adding starch to the milk in order to mechanically break up the curd, is unphysiological and very objectionable. The

products of the complete digestion of starch are glucose and saccharose (maltose), and these, in various forms, have been recommended to be used as additions to the milk under the name of "Liebig foods." When in excess, these substances cause diarrhoea, and when administered alone do not sufficiently nourish the child. Dr. J. Lewis Smith speaks favorably of dextrine, which is a partially digested starch, as a good substitute for glucose and saccharose in artificial foods. The fact cannot be too strongly insisted upon, which is taught both by clinical experience and by physiological investigation, that the food of either infants or adults, except in special emergencies, should never be fully predigested, for fear of permanently weakening or destroying the digestive functions of the stomach.

4. A great part of the large mortality of infants in all our cities is due to the bad quality of the milk supply, particularly that going to the poorer classes. Professor Vaughan declares that many deaths from so-called cholera infantum are really caused by milk containing tyrotoxinon. Authorities are almost unanimous upon the point that in large cities, at least during hot weather, all milk for the nursing bottle should be boiled several times a day in order to destroy ferment germs. It is better, at such time, that the food should be freshly prepared for each feeding. In some cases, owing to the variability in the quality of the milk-supply, it may be advisable to resort, for a short time, to condensed or to evaporated milk; in either case diluting and adding cream, or an equivalent soluble carbohydrate, in order to make an artificial breast-milk. Desiccated partly peptonized milk, in the form of a milk food, containing partly converted starch (soluble starch, dextrine, and a small portion of lactose) is a convenient (and when well made, a very efficient) substitute for the mother's milk.

5. Where the child is a premature birth, or is feeble from other causes, as great care should be observed in preparing its food as in prescribing its medicine. Experience has demonstrated that success in infant-feeding is dependent upon the ability to individualize the patient, and to select the proper food for each case. For very delicate infants the mother's milk is often found not only inadequate to properly nourish the child, but also positively injurious. This is generally admitted where some obvious dyscrasia exists, as the tuberculous or syphilitic. It is a fact that in such feeble infants artificial mixtures can be made which will agree with the weak digestive functions and satisfactorily nourish the child.

In conclusion, your Sub-Committee would direct attention to the remote and far-reaching effects of the mal-nutrition resulting from improper feeding in early life, to be witnessed in chronic invalidism or in premature death of the individual, and to the inevitable physical degeneracy

threatening the race where the principles of infant dietetics are neglected. In view of the importance of the subject, the Sub-Committee respectfully asks to be continued in order to further investigate the matter, and to report to the next meeting.

All of which is respectfully submitted.

FRANK WOODBURY, M.D.,

Chairman of Sub-Committee on Infant Feeding.

Question 1.—Are malt sugar foods liable to produce abnormal fermentation in the stomach, especially with infants? Do they often do so? Can you assign the reason in cases where it occurs? Is maltose in excess in the food of infants objectionable, and why?

I have never seen any signs of fermentation which I could attribute to the influence of maltose. It is true that all infants cannot digest maltose or malted foods, but even in these cases I have never seen reason to suspect the difficulty to be due to the fermentation of maltose. (Eustace Smith.)

I believe that all sugar in excess of that normally contained in mother's milk is liable to undergo fermentation before it can be absorbed, and hence, by interfering with the normal decomposition of the bile in the prima via, hinders absorption of fats and possibly of peptones, and so interferes with nutrition. (Rohé.)

It depends entirely upon what form the malt sugar is administered in. In general it must be said of the carbohydrates that they are best administered to infants in the form of glucoses. Maltose is not a glucose and ought not to be administered to such infants, in whom the salivary and pancreatic functions have not been established. In regard to the sugar ferment of the stomach nothing is known as far as relates to infants. (Uffelmann's case is the only one on record, and that was in a boy.) (Forchheimer.)

Yes. Malt sugar undergoes fermentative changes very readily and does harm often when used as an ingredient of infants' foods, on account of its fermentation. (Vaughan.)

Maltose can be assimilated by the infant only in very small quantity. When administered in excess it gives rise to diarrhoea, probably owing to its fermentation. It is also objectionable because it starves the tissues, while it increases the fat, giving an appearance of plumpness and health to the infant which, however, is delusive, as seen by its feeble powers of resistance to disease. (Woodbury.)

Question 2.—If the Liebig or malt-sugar foods are likely to ferment in the stomach before assimilation commences, is it advisable to add them to cow's milk, in which the resulting acidity tends to transform the casein into indigestible curds?

I do not think it advisable to add maltose to cow's milk in greater quantity than would be necessary to raise the proportion of sugar in cow's

milk to make it correspond in this respect to human milk. For this purpose, I think pure cane-sugar is preferable to preparations of uncertain composition. (Rohé.)

In Liebig's food the starch is converted to dextrose, as well as into maltose. (Forchheimer.)

It is not advisable to add malt-sugar to cow's milk which is to be used for infants' food. (Vaughan.)

As ordinarily practiced, the feeding of children with Liebig's foods with (milkman's) cow's milk is not advisable, and often distinctly injurious. (Woodbury.)

Questions 3 and 4.—Should not dextrine be preferred to malt sugar for ingestion in the case of infants, and if so, for what reasons? Can dextrine ferment before it is changed to sugar?

With regard to the first four questions relating to the fermentability of malt extract, I think they should be addressed more appropriately to the physiological chemist than to the physician. (Eustace Smith.)

I have no opinions to offer upon these points. I have seen it stated somewhere that dextrine does not ferment before it is changed into sugar, but this is not remarkable, since dextrine is simply one of the stages of the process by which starch is converted into sugar, or, carrying the process further, into alcohol and acetic acid. But I can readily understand that it may be advantageous to have something for the amylolytic ferments present in the saliva and pancreatic secretions of even quite young children to act upon, rather than that these ferments should be mingled with the food in the stomach and intestinal canal, without an opportunity of undergoing their physiological decomposition. (Rohé.)

Dextrine must first be converted into dextrose before it can be utilized by the economy. Dextrine, which is a starch, cannot be fermented until converted to dextrose (grape sugar). (Forchheimer.)

Dextrine is preferable to malt sugar, because it (the dextrine) does not ferment so readily. I do not think that dextrine can undergo fermentation before it is converted into sugar. (Vaughan.)

The chemistry of the different forms of glucose is still in an unsettled condition. I am opposed to an excess of any form of grape-sugar in the diet of infants. Dextrine is partially digested starch, and is readily converted into dextrose by the digestive fluids. It is preferable to maltose because it affords an opportunity for physiological activity of the digestive fluids containing ptyaline (salivary and pancreatic secretions, succus entericus). (Woodbury.)

Question 5.—Will any of the ordinary artificial "infant foods" now in the market thoroughly nourish the child without the addition of cow's milk?

No artificial food will efficiently nourish an in-

fant unless cow's milk be added; for all preserved foods want the living antiscorbutic principle, which is only to be found in fresh foods. In other respects many of them, such as the dessicated milk foods, contain in themselves, as far as I know, all the elements of nutrition. (Eustace Smith.)

None of those foods which I have studied, either theoretically or practically, seem to me to fulfil the indications. It seems strange, however, that, with the large amount of definite knowledge we possess upon the physiology of digestion, chemists have hitherto failed in giving physicians a trustworthy preparation based upon physiological principles. (Rohé.)

Yes, provided you include milk foods, as ———'s or ———'s. (Forchheimer.)

Yes, there are one or two. (Vaughan.)

I think that a good milk food answers the requirements very acceptably. (Woodbury.)

Question 6.—Do the ordinary so-called infant foods add any constituent to cow's milk which it does not contain in sufficient quantity already?

I do not think that the ordinary infant's foods add any constituents to cow's milk which it does not already contain in sufficient quantity, but many of them by presenting certain of the constituent in a more digestible form, may contribute greatly to the nutrition of the infant. For instance, few children digest a sufficient quantity of the curd of cow's milk. The greater part of the casein in the shape of a dense tough mass of cheese, passes almost unchanged by the bowels. Where this is the case, the child runs a great risk of being under-nourished unless he assimilates some substitute for the missing curd. This may be supplied by the addition of a well-selected infant's food. (Eustace Smith.)

None, in my opinion, except sugar. (Rohé.)

Yes. (Forchheimer.)

Yes, the best add dextrine. (Vaughan.)

If the cow's milk is diluted, some of the foods do, by making up the deficiency of carbo-hydrates or hydro-carbons. (Woodbury.)

Question 7.—Should not all the infant foods that are required to be given with cow's milk of ordinary quality be rated in value as sugar only?

I cannot answer. (Eustace Smith.)

Yes, because any other constituents are unnecessary and probably injurious. (Rohé.)

No, salts and some sugar. (Forchheimer.)

Yes. (Vaughan.)

There are many that are inferior in food value to plain sugar. (Woodbury.)

Question 8.—Do any of the "milk foods" contain more than 15 per cent. of solid constituents of cow's milk?

I cannot answer. (Eustace Smith.)

I have before me, as I write, a preparation for which the claim is made that it contains 50 per

cent. of cow's milk. Now, as cow's milk contains only 12 per cent. of total solids, there are in this special preparation only 6 per cent. of milk solids. Another preparation, in my hands at this moment, is said (on the label) to contain 50 per cent. of the solid constituents of the milk; the other, 50 per cent. is said to consist of dextrine and soluble starch. I have had no practical experience with this preparation. However, if the claim made for it is true, this would answer the question in the affirmative. (Rohé.)

Yes, if I understand the question correctly. (Forchheimer.)

Yes. (Vaughan.)

I do not know. (Woodbury.)

Question 9.—Recognizing that the casein of breast-milk is partially a peptone, must not cow's milk, with its tough casein, be illy adapted to the rearing of infants whose digestion is feeble in comparison with that of the calf?

I think the cow's milk should be specially prepared for the infant's stomach, whether by predigestion or otherwise. (Eustace Smith.)

In practice I have found that many infants can digest the casein of cow's milk, but this presupposes intelligent feeding which is not always attainable. Such children, however, much oftener suffer from digestive derangement than nursed infants (Rohé.)

I do not recognize the casein of breast-milk "as partially a peptone." Human milk does contain a small quantity of peptones, but we are far from certain that they are derived from the casein. (Forchheimer.)

Yes. (Vaughan.)

Yes, especially if the infants are at all delicate. (Woodbury.)

Question 10.—In view of the difference in the character of the casein of human milk and cow's milk, is it not advisable to have the cow's milk partially pre-digested, or sufficiently so as to render it like the casein of human milk and as readily digestible by the infant?

Cow's milk should be especially prepared for the infant's stomach, either by predigestion or otherwise. (Eustace Smith.)

If this could be attained in practice, I think it would be a great advance in the art of nourishing children deprived of breast-milk. The preparation referred to (under 8) is said to be partly so digested. The claim deserves investigation by experts. (Rohé.)

If cow-casein could be so changed as to be identical in all its properties with human casein, the problem of artificial feeding would be almost solved. (Forchheimer.)

Yes, this is a very important point. (Vaughan.)

This is a consummation most devoutly to be wished. (Woodbury.)

Question 11.—When farinaceous foods are added to cow's milk for the purpose of preventing

the hard coagulation of casein by their physical action, do they not add another indigestible element, and is not their value for the purpose dependent upon their insoluble or indigestible character?

Cow's milk should be especially prepared for the infant stomach (answer to previous question). If this be attempted by the addition of flour or similar starchy compound, I think the farinaceous addition contributes little to the nutrition of the infant. (Eustace Smith.)

I think the practice objectionable at least before the child has reached the 10th month of age. (Rohé.)

It depends entirely upon the age of the infant. (Forchheimer.)

Yes. (Vaughan.)

Yes, the object of adding corn-starch or similar substances to cow's milk is avowedly to make the curd less cohesive, and not to add any nutritive element to the food. (Woodbury.)

Question 12.—Is the peptonizing of cow's milk practical in the household, and can it be uniformly and properly performed by the nurse or mother, or does it require the supervision of an experienced chemist?

The peptonizing of cow's milk is quite practicable in the nursery; the ordinary process does not digest all the curd, but still enough for all practical purposes. (Eustace Smith.)

In a few cases I have been able to make mothers understand the process of peptonizing milk, but in the majority of instances my efforts have not been rewarded by success. The proceeding is so troublesome that mothers get careless, and nurses—well, the people who need nurses most are generally unable to employ them. (Rohé.)

No. The method most commonly used (—)'s is bad; and it is the only one which can be carried out by the intelligent (!) attendant. (Forchheimer.)

It should be done under the direction of a competent chemist. Nurses will not do it as it should be done. (Vaughan.)

I consider it impracticable. The women intelligent enough to conduct the process properly are engaged in teaching in some college, and if married, rarely, if ever, have children. (Woodbury.)

Question 13.—For infant-feeding should the casein of cow's milk be wholly pre-digested, or fully peptonized, and if not, why?

I think it objectionable to relieve healthy organs of any of their duties; hence, I object, in the interest of the future health of the individual, to wholly peptonize, pre-emulsify, or prepancreatize any food. While there may be no exact observations on record, I think a stomach whose peptic glands are not called into use might get out of the habit of digesting altogether, and so

be of no more use to the individual than a bag of rubber which had the power of rythmical contraction. (Rohé.)

I think that peptones, not peptonized milk, can be used to great advantage in proper cases. Peptonized milk is out of the question, as we have no method by which this can be obtained with accuracy. The use of pancreatic ferments in my opinion is fallacious, as it introduces into the intestinal tract, especially very young ones, products that are decidedly dangerous in their actions. I have made some experiments with the process which has pushed me to the conclusion that my reasoning is correct. I have seen infants under 2 months do well on cow's milk when they would have died with mixture. One series of experiments was conducted upon foundlings, half of which were given milk undigested and the other half digested. The result was that those on milk did well, and the other half had to return to milk, otherwise they would have died. Besides, tryptic and stomachic digestion do not agree together. (Forchheimer.)

The casein should not be wholly digested. It is unscientific to feed a child upon food, the proteids of which are wholly digested. The stomach must have some work to do, or it will become enfeebled by disease. (Vaughan.)

It is unphysiological. (Woodbury.)

Question 14.—Since pancreatine is itself subject to putrefaction, should it not therefore be used for the purpose of digesting milk when freshly made? Is the offensive odor of some pancreatic preparations that are sold in the market due to impurity or decomposition? Is there danger that such putrefactive changes are likely to impart deleterious qualities to the milk?

The pancreatine should, of course, be used before it has putrified and lost its properties. (Eustace Smith.)

I think it highly probable that ptomaines may result from the decomposition of pancreatic ferments. I must confess, however, that I have no observations upon this point beyond the violent appeal to my olfactories made by some pancreatic preparations. (Rohé.)

Whatever has been said about —'s is true of all pancreatic products. (Forchheimer.)

Yes, the offensive odor comes principally, I think, from impurities; though even a pure preparation, if it could be obtained, would probably decompose. (Vaughan.)

Unless nastiness is a recommendation, most of the commercial digestive preparations should be excluded from the household. (Woodbury.)

Question 15.—What proportion of cow's milk found in our large cities during the summer months is in a proper condition to feed children? Is not the cause of the great mortality at this season largely due to fermentative changes taking place in the milk before it reaches the consumer?

In large cities during the summer, cow's milk brought from a distance is, no doubt, often far from fresh and therefore ill-adapted to further healthy nutrition, if not actually injurious to the recipient. (Eustace Smith.)

Sanitarians are agreed that the methods of milk supply in large cities urgently demand reform. There is no doubt that during the hot weather of summer, decomposition sometimes occurs in milk which renders the latter violently poisonous. The outbreaks of tyrotoxicon poisoning so well studied during the last two years by Professor Vaughan, Drs. Newton, Shippen, Wallace, and Professor Shearer, of Iowa, prove this. Added to this danger is that of allowing milk from tuberculous cows (and nearly all city cows are tuberculous) to be sold. I have advocated the inspection of milk by qualified officials in this city, (Baltimore,) but I am sanguine that such inspection would remove the most serious danger, which is not adulterated milk, but milk that is unwholesome or dangerous from other causes. (Rohé.)

I know of but three milk men in this city (Cincinnati) who supply milk which can be absolutely relied upon in summer. Yes. (Forchheimer.)

I think that poisonous milk is the cause of a large percent. of the mortality among children, especially among the poor classes of our large cities. It would be impossible to say what proportion of the milk supplied to the cities becomes unwholesome in the hands of the small retail dealer, and also after it has been sold to the poor, who have no means of keeping it at a low temperature and in a non-vitiated air. (Vaughan.)

To the dangers from adulteration with ditch water or that from infected pumps, we have the possibility of metallic poisoning from the cans. (See article relating to this subject by Dr. Geo. Hall, in the *Philadelphia Medical Times*. (Woodbury.)

Question 16.—What recent advancement has been made in foods for infants that is worthy of consideration in furnishing us with an artificial food at all analogous to, or approximating towards, human milk in composition and digestibility?

I have no personal knowledge of such advancement. (Rohé.)

None. The last was —, only applicable to individual cases, however. (Forchheimer.)

It is possible that such an advance has been made; the matter is still under trial before the profession. (Woodbury.)

I think that the addition of dextrine instead of sugar or starch to the milk solids, and the partial digestion of casein are important advances. (Vaughan.)

FOREIGN CORRESPONDENCE.

LETTER FROM VIENNA.

(FROM OUR OWN CORRESPONDENT.)

*Dextrocardia—Conservative Cesarean Section—
—Tuberculosis Verrucosa Cutis—Syringomyelia—
Extirpation of the Initial Sclerosis and the Lym-
phatics in Syphilis.*

An interesting discussion on dextrocardia has recently taken place in the Imperial Royal Society of Physicians of Vienna. The impulse towards such an exchange of opinions, in which Prof. v. Bamberger and Prof. Kundrat took part, was given by the demonstration of a case of congenital dextrocardia by Dr. Gruss. The patient, a girl 29 years old, had suffered in her youth from measles and varicella; at the age of 14 years she was the subject of peritonitis. It was stated that at her birth her grandmother had felt the beat of the heart on the right side of the chest. Until the twentieth year of age the patient had suffered from dyspnoea, palpitations of the heart, and at present she invariably has a sensation of cold. On the percussion of the chest a clear sound was noticed all over the left side, whereas a dull percussion note was found to be present on the right side, commencing over the third rib and reaching as far as the liver; the pronounced dullness of percussion was moreover to be observed over an area which extended from the right sternal margin and approximately reached as far as the middle between the mamillary and the anterior axillary line. On auscultation two clear sounds could be heard anywhere, of which the first one was accompanied by a murmur, whereas the second sound was much accentuated. The cardiac murmur could also be noticed over both the carotid arteries; in the rest, the peripheral arteries were narrow and the pulse small, but synchronic with the action of the heart. The visceral organs had their normal position.

Dr. Gruss was led by this complex of symptoms to diagnose a condition of pure dextrocardia with transposition of the great blood-vessels and congenital stenosis of the pulmonary artery. The murmur mentioned before was, in his opinion, due to stenosis of the pulmonary artery.

Prof. v. Bamberger first wished to lay stress on the fact that dextrocardia *per se*, without a *situs viscerum inversus*, was to be met with in exceedingly rare cases. In the course of forty years he had observed twelve cases of *situs viscerum inversus*, but only three cases of pure dextrocardia. From the cases which had been gathered by Prof. v. Schrötter it became evident that in the great majority of conditions of dextrocardia, a congenital disease of the blood-vessels was also present. In one case which the lecturer had observed, there was surely no congenital disease of the

blood-vessels present, and the insufficiency of the mitral valve was derived from endocarditis after rheumatism.

Prof. v. Bamberger then discussed the case under consideration, which had a particular interest owing to the symptoms found on auscultation. The murmur which was heard was one characteristic of a stenosis; and the question now arose as to whether the conus arteriosus or the valves were stenosed? The stenoses of the conus arteriosus were exceedingly rare, and they were usually of a congenital origin, as they were due to a myocarditis during the fetal life. The stenoses of the valves, however, were very frequent and were to be met with in all the periods of life. In the case under consideration there was the question of a stenosis of the conus arteriosus, as the second sound was clear and sonorous, which was not to be met with in stenosis of the valves. The further question was as to whether the stenosis was present in the aorta or the pulmonary artery? The small pulse would be in favor of the admission of a stenosis of the aorta, but the fact that the second sound was clear and sonorous pointed to an increase of the blood pressure, which was not present in the case of stenosis. The small pulse, in spite of the augmented blood pressure in the aorta, was to be explained by the fact that the ductus Botalli had remained open in this case, and that a large portion of blood was thrown through it into the pulmonary artery.

Prof. v. Bamberger was not of the opinion that a transposition of the large blood-vessels was also present in this case. Such a condition could not, moreover, be at all diagnosed; it was only known from the pathological anatomy. When the arterial blood, in such a case, was thrown through the pulmonary artery into the lungs, and the venous blood into the aorta, the life of the respective individual was quite impossible. When a total transposition was present, when all the parts of the heart had an inverse position, no disturbance whatever resulted from such a condition.

Prof. Kundrat, professor of pathological anatomy, remarked that the opinions on the transposition of the large blood-vessels were not yet settled. He, therefore, wished to show two such cases and to discuss them at full length. The pure transposition of the heart was a very rare condition, and in such cases it was not the question of a simple dextrocardia, but these were cases in which the right part of the heart was situated on the left side, and the left part on the right one, hence quite the same conditions as in *transpositio viscerum totalis*. In such cases the apex of the heart was directed towards the right side, the pulmonary artery equally to the same side, and the aorta to the left one. The position of the apex of the normal heart on the left side was to be explained by the development of the cardiac tube (cardiac tract). No mechanical conditions whatever could

dislocate the heart out of this position; it was always dislocated *in toto*. If the apex of the heart were, in such a case, dislocated towards the right side, the heart would have to be cracked (nicked), and a complete interruption of the circulation would be the result.

As to real dextrocardia, Prof. Kundrat had hitherto found it only in cases of *monstrum duplex* in which both the hearts were contained in one pericardium; furthermore, in the case of total transposition of the viscera. Dextrocardia was, however, also to be met with under other conditions, and such were reported by Brechet, G. St. Hilaire, Förster, and others, but the conditions respecting the blood-vessels were not discussed by any one. The dextrocardia was necessarily combined with abnormal conditions of the veins. As the atrium, which receives the large veins (the superior and inferior vena cava) was not normally situated, as its position was on the left side, the development of the *venæ cavæ* had also to be an abnormal one, and there were also other abnormalities in the development of the heart and the large blood-vessels. In one case of real dextrocardia, which had been observed by Prof. Kundrat, the aorta was inclined towards the right side and was much more developed in comparison with the pulmonary artery; the heart was, properly speaking, trilobular, as it had one ventricle and two defectively developed atria, which were separated from each other.

The dextrocardia could also be combined with a transposition of the large blood-vessels, the aorta, in such a case, having its direction towards the former and right side, the pulmonary artery towards the posterior and the left one. The statement that such a condition was inconsistent with the life of the individual, was not valid for all cases. By an abnormal direction of growing of the "septum ventriculorum," the abnormally situated trunks of the blood-vessels could be caused to discharge into the corresponding chambers of the heart; such a transposition was called a "corrected transposition." In most cases such a corrected transposition was, indeed, not observed, and this was the reason why most such individuals succumbed at an early period. In the case of real dextrocardia there were, usually, also other defective formations present, such as incomplete development of the septum, abnormalities in the size of the trunks of the blood-vessels, etc.

Prof. v. Bamberger replied that if Prof. Kundrat spoke of a corrected transposition of the blood-vessels, this was not the proper transposition, at least in the clinical sense.

Prof. Gustavus Braun brought forward before the same Society a woman, 37 years old, on whom he had, for the first time performed Cæsarean Section after the conservative method, owing to a relative indication. The patient had stated that eight days before her admission into the hospital the

amniotic liquid had already commenced to discharge freely. The uterus showed tetanic contractions. On measuring the pelvis, the following conditions were found to be present. The distance of both the "spinal anteroses" was 23 centimetres, that of the centre 28, and the distance between the trochanters 29 centimetres. The perineum was rigid, the vagina narrow, and the vaginal portion of the uterus measured 2 centimetres in length. The *conjugata diagonalis* had a length of 10 centimetres, and the *conjugata vera* from 8 to 8½ centimetres. The head of the foetus could be felt through the uterine orifice. As the uterus was contracted to such a degree that the inferior uterine segment became exceedingly dilated, and the child was still living, death of the foetus and rupture of the uterus was to be feared. The hope of saving the child, and the fact that a delivery *per vias naturales* was combined with danger of life for the mother, induced the lecturer to perform Cæsarean Section after the conservative method, which was performed in the usual way. For closing the uterus, silver sutures and sutures of sublimated catgut were availed of. The sutures were secured, and the serous membrane was separately united, so that the contracting uterus could not give rise to any disturbance. After the removal of the elastic band some blood still escaped, which was stopped by means of a few sero-muscular sutures. After *toilette* of the peritoneum and reposition of the uterus the abdominal wall was closed by means of eight hooks, a dress of iodoform gauze was applied and the foetid discharge from the vagina was removed by lotions of a solution of thymol.

The course of the operation was normal, and the temperature only once reached 38.3° C. A living child was extracted which had a length of 50 centimetres, and the weight of which was 2,900 grams. The present examination showed that the uterus was quite movable and that no adhesion to the abdominal wall could be proven.

Prof. Braun remarked that for more than thirty years and in more than 200,000 cases of delivery in the obstetrical clinics of the Vienna General Hospital, the Cæsarean Section for a relative indication, had not been made even once. The reason for this conduct of the obstetricians was the fact that in the pre-antiseptic times one was not able to promise the mother that her life would be saved.

Docens Dr. Riehl showed a man who was affected with *tuberculosis verrucosa cutis*, the so-called inoculated tuberculosis of the skin. This affection had been in former times considered by the lecturer as being a local and harmless process. The case under consideration, however, showed that a general infection with tuberculosis could also be the result. The affection in this case supervened owing to a slight lesion of the finger; a softening nodule developed there and other sim-

ilar nodules came on the arm; the lymphatic glands became also affected, there was, moreover, a catarrh of the apices of the lungs and hæmoptysis. The primary affection of the finger was at present surrounded by warty excrescences of the skin; ulcerating nodules were to be found on the back of the hand, the fore- and upper-arm. These nodules corresponded to the *gommes scrophuleuses* of the French, and it was of a great interest to learn that a well pronounced *tuberculosis verrucosa cutis* could give origin to the development of such *gommes*. It was, moreover, to be remarked that in the scars of some of these nodules there were also other solid and isolated nodules which bore a great resemblance to the nodules in the case of lupus. The present case was, therefore, also an evidence for the connection between lupus and tuberculosis, which was still denied by many dermatologists.

Prof. Kahler, in an important paper which he read before the Society of German Physicians, at Prague, discussed the possibility of a more exact clinical diagnosis of syringomyelia. The lecture was also illustrated by a demonstration of several patients. He first directed the attention of the audience to a case observed by him in former years, in which the *post-mortem* examination confirmed the diagnose of syringomyelia in the cervical part of the spinal cord. The same complex of symptoms which had been present in that case was also, for the greatest part, to be found in the case which he now brought before the Society. The patient, a man, 26 years old, suffered for three years from emaciation and wasting disturbances on the hands. The affection first set in on the left side, and was then observed also on the right. No pains, but paræsthesias, and for the last time, also, disturbances of sensibility were present. For the last year particular trophic disturbances came on. They consisted in the formation of vesicles and ulcers, which first supervened over the skin of the right hand, and later on over the skin of the shoulders and upper-arms. The ulcers healed and hypertrophic and keloid scars remained behind. The muscular atrophy corresponded, as far as its intensity and its spread was concerned, to the type "Aran-Duchenne," and had hitherto remained confined only to the internal muscles of the hands. The patient, presented some symptoms on the part of the sympathetic nerve. These symptoms consisted in narrowing of the left eye-cleft and retraction of the eye-ball, as well as in narrowing of the left eye pupil. Prof. Kahler, in conformity with the German physicians, considered these symptoms as being essential for syringomyelia, and this was especially true of the ocular papillary symptoms which pointed to a participation of the centres of the sympathetic nerve in the cervical part of the spinal cord. When the disturbances of sensibility were for a long time the sole symp-

toms observed in such a case, this condition pointed to a preceding participation of the funiculi posterioris of the spinal cord in the formation of the cavity in the matter of this organ. The lecturer then discussed the symptoms of differential diagnosis between the disease under consideration and the cervical myelitis, the compression of the cervical part of the spinal cord and the pachymeningitis cervicalis hypertrophica.

As to the anatomical basis of the syringomyelia, Prof. Kahler reminded the Society of the theory which had been established by Pick and himself, according to which the formation of the central cavity derived its origin from the dilated central canal of the spinal cord during the congenital life. The recent work of Schultze on the central glioma was, moreover to be taken into account.

Prof. Chiari delivered a lecture on syringomyelia from the anatomical point of view. He discussed a case of this affection of the spinal cord which he had recently examined, and in which the central long cavity in the spinal cord was to be looked upon as representing a chronic internal hydromelia produced by hyperplasia of the central glia-tissue and exudation into the central canal. The lecturer then passed over to the divergent opinions that exist in regard to the genesis of syringomyelia. Central and long cavities in the spinal cord of adults might be produced in a very different way, viz., by decomposition of a central glioma; secondly, owing to the persistence and further development of congenital abnormalities of the central canal; furthermore, by disturbances in the circulation of the spinal cord, or from myelitic softenings, lastly, they may be due to hydrocephalus internus, and as to the last explanation, Prof. Kahler thought that it had to be applied in the case he had mentioned before. In such a case there was a vegetation of the tissue of the ependyma and transudation from its blood-vessels into the central canal, which was possibly not pathological previously. The exact histological examination, and particularly the proof of the presence of the epithelial layer in the central cavities, was combined with the greatest difficulties. Prof. Chiari proposed to call all those cases in which there were central long cavities, and which were due to dilatation of the central canal, hydromelia interna, and to use the term syringomyelia only for those cases in which the formation of the cavity was surely in no connection with the central canal of the spinal cord. Such a condition was also to be met with more rarely.

Prof. Neumann read a paper on the subject of "Extirpation of the Sclerosis, together with the Lymphatic Glands, in the case of Syphilis," before a recent meeting of the Imperial Royal Society of Physicians, of Vienna. Among the numerous attempts at a preventive-cure of syphilis, it was chiefly the extirpation of the initial sclerosis which had been tried with a view of preventing

the development of constitutional syphilis. These experiments were, as was known, raised to the level of a regular method by the late Prof. Auspitz, of Vienna. The lecturer, owing to his clinical experiences, belonged to the adversaries of this method. They who remove each venereal ulcer, each gumma on the penis, and each chancroid, will, of course, also obtain favorable results, as the last mentioned affections remained free from consecutive appearances even without any extirpation of the local focus of the disease. This method had already lost many of its adherents, and was only availed of in cases in which phimosis to a high degree was produced by sclerosis. The method of an early removal of the sclerosis, together with the adjoining lymphatic glands, seemed to have a better chance of success. Vogt, in 1871, urged the removal of these "deposits" of the syphilitic virus for thus shortening the course of the disease and preventing an invasion of the virus from the local foci.

Bum, in 1882, had carried out the respective experiments; he inoculated on a healthy individual the milky serum of an indolent lymphatic gland which was due to sclerosis, and thus, after the course of four weeks, produced sclerosis and the consecutive appearances. Bum, for this reason, explained the bad success in the case of extirpation of the sclerosis by the supposition that the virulent foci were allowed to remain behind in the lymphatic glands, and, therefore, recommended the excision of the indolent lymphatic glands for obtaining better results. The early excision of the sclerosis and the lymphatic glands was also said to be of a prophylactic influence with reference to relapse and the occurrence of severe forms of the syphilis. Professor Neumann then showed a man who was affected with syphilis, and reported on the course of his disease. The patient was under his care for about five years. On the thirty-second day after the infection, the sclerosis and the adjoining lymphatic glands of the left inguinal region were removed. The wound healed by primary intention. On the fifty-third day after the infection roseola and papulæ nevertheless supervened on the abdominal wall. The patient took iodide of potassium, and twenty injections with mercury were performed on him. He remained in the clinic from June 13 until August 20, hence for 60 days in the whole.

On April 16 the patient again came into the clinic of the lecturer with the following appearance: Two scars, due to the above-mentioned operations, on the back of the penis and in the left inguinal region. The left testicle was the size of an apple, and the limits between the testicles and the epididymides had disappeared, so that these together formed but one tumor. Over the posterior wall of the pharynx there was a large oval ulcer, with undermined borders, and the basis of which had undergone a caseous process. A sim-

ilar infiltration was present on the border between the uvula and the soft palate. The tonsils were also affected.

This case, Prof. Neumann remarked, sufficiently proved that even the early extirpation of the sclerosis, together with the lymphatic glands, was not able to prevent the development of the syphilis, nor could the intensity of the affection become impaired by such a course of treatment. The symptoms met with in the case now referred to, such as gummatous orchitis, syphilitic gummata on the pharynx and the soft palate, were to be considered as being severe forms of the syphilis.

L. L.

MISCELLANEOUS.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.—*Preliminary Announcement of the Annual Meeting, to be held in Washington, D. C., September 18, 19 and 20, 1888*

Subjects: The President's Annual Address, William H. Taylor, Cincinnati.

Discussion. Extrauterine Pregnancy. 1. Pathology. 2. Diagnosis. 3. Treatment. a. Medical. b. Electrolytic. c. Surgical.

The Relations of the Abdominal Surgeon to the Obstetrician and Gynecologist, Albert Vander Veer, Albany.

Operation for an Unusual Case of Subserous Uterine Fibroid, Hampton Eugene Hill, Saco, Me.

Drainage in Abdominal and Pelvic Surgery, Joseph Price, Philadelphia.

Double Ovariectomy during Pregnancy; a Successful Case Going on to Full Term, William Warren Potter, Buffalo.

The Indications for Artificial Aid in Labor, Thomas Opie, Baltimore.

The Technique of Vaginal Hysterectomy, James H. Etheridge, Chicago.

The Surgical Treatment of the Perineum, William H. Wathen, Louisville.

Laparotomy in Peritonitis, E. E. Montgomery, Philadelphia.

Tumors of the Abdominal Wall, Charles A. L. Reed, Cincinnati.

Uterine Fibroids; their Diagnosis and Treatment, Thos. J. Maxwell, Keokuk.

Desmoid (Fibroid) Tumors of the Abdominal Walls, Edward J. Ill, Newark.

Ruptured Perineum, J. Henry Carstens, Detroit.

A Contribution to the Study of Pelvic Abscess, Clinton Cushing, San Francisco.

The Female Perineum; its Anatomy, Physiological Function, and Methods of Restoration after Injury. This paper will be illustrated with lime-light and screen. Henry O. Marcy, Boston.

Heart Failure in the Puerperium, Thomas Lothrop, Buffalo.

Treatment of Suppurative Peritonitis, William H. Myers, Fort Wayne.

Operative Treatment in Uterine Carcinoma, George R. Shepard, Hartford.

The Reflexes Reflected; or Some Things that Retard Progress in Gynecic Surgery, Joseph Eastman, Indianapolis.

Some Points in Relation to the Diagnosis of Pregnancy in the Early Months, James P. Boyd, Albany.

Vaginal Tamponement in the Treatment of Prolapsed Ovaries, W. P. Manton, Detroit.

Mr. Lawson Tait, F.R.C.S.E., Birmingham, Eng., will

also present a paper on "The Methods of Success in Abdominal Surgery."

NOTE.—Mr. Lawson Tait, Dr. Franklin Townsend, Dr. E. E. Montgomery, Dr. Charles A. L. Reed, Dr. A. Vander Veer, and others will participate in the discussion on Extraterine Pregnancy. The full announcement of the topics that each referee will speak to will be made in the final programme to be issued in August.

WILLIAM H. TAYLOR, M.D., President.
WILLIAM W. POTTER, M.D., Secretary.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.—*Preliminary Announcement of the Annual Meeting to be held at Birmingham, Alabama, September 11, 12, 13, 1888.*

Subjects: The President's Annual Address, W. D. Haggard, Nashville, Tenn.

The Annual Oration, W. F. Hyer, Holly Springs, Miss.
Floating Kidney, with Vicarious Menstruation, DeSausure Ford, Augusta, Ga.

Gastrostomy, W. B. Rogers, Memphis, Tenn.
The Medical Treatment of Fibroid Tumors of the Uterus, Bedford Brown, Alexandria, Va.

Indications for Operative Interference in Cerebral Troubles, T. O. Summers, Jacksonville, Fla.

A Case of Tubal Pregnancy, Presenting Interesting Medico-Legal Relations, E. P. Sale, Aberdeen, Miss.

Superinvolution of the Uterus following Trachelorrhaphy, Virgil O. Hardon, Atlanta, Ga.

1. Dermoid Cysts of the Coccygeal Region, and 2, Electrolysis in Gynecology and Surgery, E. J. Beall, Fort Worth, Texas.

Alexander's Operation, W. L. Nichol, Nashville, Tenn.
Hysterectomy in Cancer of the Uterus, W. H. Wathen, Louisville, Ky.

The Extravagancies and Impracticable Requirements of Modern Antiseptic Surgery, so far as the Country Practitioner is Concerned, J. M. Taylor, Corinth, Miss.

Treatment of Fractures with Plaster of Paris Splints, W. F. Westmoreland, Jr., Atlanta, Ga.

The Present Status of Electro-Therapeutics in Gynecology, J. R. Buist, Nashville, Tenn.

Antiseptics in Surgery and Gynecology, F. T. Merriweather, Asheville, N. C.

The Attitude of Removal of the Uterine Appendages for the Cure of the Convulsive Neuroses, W. Locke Chew, Birmingham, Ala.

Interesting Cases of Surgery, R. M. Cunningham, Pratt Mines, Ala.

My Antiseptic Bags, or Practical Aseptic Surgery, J. W. Long, Randleman, N. C.

The New Departure in Uterine Therapeutics—The Dry Method, T. A. Means, Montgomery, Ala.

A Study of the various Methods of Treatment of Laceration of the Perineum and Rectocele, with Report of Cases, J. H. Blanks, Meridian, Miss.

Report of a Case of Spinal Concussion, Juo. R. Page, Birmingham, Ala.

Fractures of the Forearm, Juo. Brownrigg, Columbus, Miss.

Some Practical Thoughts in Surgery, Jaunes Guild, Tuscaloosa, Ala.

Perineal Lacerations, M. C. Baldridge, Huntsville, Ala.

Electrolysis in the Treatment of Urethral Strictures, S. M. Hogan, Union Springs, Ala.

The Field and Limitation of Laparotomy, I. S. Stone, Lincoln, Va.

Operative Procedure in Hypertrophy of the Prostate, R. D. Webb, Birmingham, Ala.

Discussion. Abdominal Surgery.

Drs. Jno. Herbert Claiborne, Duncan Eve, Paul F. Eve, W. T. Briggs and others will present papers, but as yet have not stated their subjects.

NOTE.—The Association will convene in the hall of the Y. M. C. A., at 10 o'clock A.M. each day. The Annual Oration will be delivered at O'Brien's Opera House on

the evening of the first day's session, at which time the Mendelssohn Club of Birmingham will give a concert for the entertainment of the Association. Entertainments have been arranged by the local committee to take up all the hours not occupied by the sessions. Hotels and railroads will give reduced rates, but only those holding certificates, signed by the ticket agent at point where through ticket to place of meeting was purchased, will be entitled to the two-thirds reduction in return fare.

W. D. HAGGARD, M.D., President.
WM. E. B. DAVIS, M.D., Secretary.

A TRIBUTE TO DR. GARNETT.—The following very appropriate remarks were made at the Medical Society of the District of Columbia on the death of Dr. A. Y. P. Garnett, by DR. JOHN B. HAMILTON:

A giant among medical workers has fallen; a dauntless soul has left our midst. A gentleman, without fear and without reproach; a physician with a spotless record; a practitioner most able; a consultant clever, courteous and conscientious; a scholar of high repute; a medical officer skilled in the exigencies of military and naval warfare; a man of the utmost energy; a devoted friend. All these attributes were possessed by our late colleague, the fact of whose future absence from our meetings falls on more than one here to-night as a personal loss.

Many of us had been accustomed to look for sympathy, support, and counsel to our departed colleague, whose wide knowledge of the world, great learning and vast experience made it a pleasure to be associated with him.

Dr. Garnett, leaving us at the age of 68, has left us the record of a life singularly complete in all that makes up a gentleman and high-class professional man.

Having graduated with honor, he entered the United States Navy, and in due course was promoted to the rank of Passed Assistant Surgeon. It was at this time that he made the voyage round Cape Horn and visited the Chilian coast. He wrote an interesting account of some cases observed in the service, which was published in the *Amer. Jour. of Med. Sciences*. He was ordered to Washington, and after marriage resigned and settled in the Capital.

He was engaged in active practice when the War of the Rebellion came. Who shall censure him now, that he followed the fortunes of his State, rather than those of the old flag? Dr. Garnett always acted true to his convictions of right, as the needle to the pole. Others might scold, sulk and backbite if they wished and remain under the protection of the flag while in enmity to its defenders, but not he. Business, property, peace and comfort were exchanged for the hardships of the camp, the battlefield and the retreat, because his convictions of the righteousness of the Southern cause forced him into the front.

Brave, honest, and true Dr. Garnett! No Northern soldier but honors his hatred of hypocrisy and his courage.

The war ended, his antagonisms died, and his practice was resumed with success, and the reward which none envied, and all approved.

He has lived as a gentleman and physician should live, and he has gone full of years, and covered with honors; but while our tears mingle with those of his immediate family, let us reflect with some satisfaction that we loved him while he lived, and honored him while he was yet in the flesh, and that he was spared the bitterness, so often accorded our great men, of meeting only envy, hatred and detraction during life. And so, while our colleague has passed beyond our ken to the realms of the unknown shore, the comforting thought comes to us that, while with us, he knew of our devotion and repaid us with his esteem.

THE CHAIR OF OPHTHALMOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, N. Y.—Dr. Herman Knapp has been appointed Professor of Diseases of the Eye in the College of Physicians and Surgeons, of New York. Dr. Knapp takes the chair occupied by the late Dr. C. R. Agnew.

Heretofore this chair, together with all the other chairs of clinical medicine, has been strictly clinical in character. Such is no longer the case with reference to the chair of ophthalmology. It has been made a didactic professorship, bears now the same dignity and entails the same emoluments as the chairs of theoretical instruction. This college is to be commended for this just step towards the recognition of specialism. This action will mark a distinctive era for specialism. It is to be hoped, and it is not improbable, that other medical institutions will follow in the steps of the College of Physicians and Surgeons.

The lamentable ignorance of eye diseases with which most graduates go into practice is a reflection upon their Alma Mater. Seeing that there is no compulsory attendance nor any examination necessary in the clinical courses of our medical colleges, the majority of students at least omit to avail themselves of the advantages which are open to them in these departments. However great a lover of knowledge a man may be, he will learn more under compulsion than when left to exercise his own free will; and however ardent a teacher a man may be, he will be more zealous in his pursuit if he feels that substantial and immediate reward awaits him for his work. In an editorial in the past we advocated this recognition of clinical instruction. We do not recognize any causal relationship between our plea and the above-mentioned occurrence, but it is grateful to see that we felt the pulses of some members of the profession with accuracy.

It is foreign to our purpose to discuss the question of specialism. Time has shown that it is inevitable; and since it is inevitable, it were best to place it as soon as possible upon a recognized and dignified footing.—*Gaillard's Medical Journal*, August, 1888.

BILLROTH ON MACKENZIE.—PROFESSOR BILLROTH, in a letter to a German daily paper recently said:

"With reference to your request for my opinion on Mackenzie, I can only reply that I have always warned people against passing a judgment on a man who, as a physician, occupies so difficult a position. I have never doubted the correctness of my Berlin colleagues, but I have also never been able to understand what political reasons made it necessary to communicate this diagnosis to the whole world. It cannot be admitted that Mackenzie with his vast experience has ever doubted the correctness of this diagnosis. If he behaved in such a way as to imply that he had some doubt as to the diagnosis, this could only be owing to pressure from above or from motives of humanity. I know such situations from my own experience; one is not inclined to disapprove the statement of one's *confrères*, but at the same time one is not inclined to tell the patient that his malady is incurable, for the known want of infallibility in medical diagnosis is almost the sole ray of hope to the unfortunate incurables. Falsehood in such cases becomes a moral act. The entire behavior of Mackenzie must, no doubt, be judged from this point of view. He did as a man and physician what was still possible to be done when the unfortunate word 'cancer' had already been pronounced. In much the same terms as these I have on different occasions expressed myself as to Mackenzie's conduct. I ask you to consider this as a private communication, at least until the sad catastrophe has occurred in Berlin."

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION will meet at St. Louis September 11, 12 and 13. The first day will be given to the discussion of abdominal surgery, the second to infant feeding and some obstetric subject. The third day will be taken up with volunteer papers and some neurological subject. The Society cordially invites all members of the profession to be present at the coming meeting. Arrangements are being made for special rates.

J. LUCIUS GRAY, Secretary.

70 Monroe St., Chicago.

DR. KARL KILCHER, Assistant in the Laboratory of Pathological Anatomy at Prague, died recently of blood-poisoning, contracted while investigating the blood of typhus fever patients.

DR. B. E. HADRA, late of Austin, Texas, has accepted the chair of surgery in the Texas Medical College, and has removed to Galveston.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from August 4, 1888, to August 10, 1888.

Major Wm. D. Wolverton, Surgeon U. S. A., is relieved from duty at Washington Bks., D. C., and ordered to duty at Ft. D. A. Russell, Wyo. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Major Wm. H. Gardner, Surgeon U. S. Army, is relieved from duty at Ft. McHenry, Md., and ordered to duty at Washington Bks., D. C. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Major Daniel G. Caldwell, Surgeon U. S. Army, is relieved from duty at Ft. D. A. Russell, Wyo., and ordered to duty at Jefferson Bks., Mo. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Major Ezra A. Koerber, Surgeon U. S. Army, relieved from duty at Ft. Keogh, Mont., and ordered to duty at Ft. Walla Walla, Washington Ter. Par. 5, S. O. 175, A. G. O., July 30, 1888.

Major Calvin DeWitt, Surgeon U. S. Army, relieved from duty at Ft. Sully, Dak., and ordered to duty at Ft. Missoula, Mont. Par. 5, S. O. 175, A. G. O., July 30, 1888.

Capt. Philip F. Harvey, Asst. Surgeon U. S. Army, relieved from duty as assistant to the attending surgeon at Washington, D. C., and ordered to duty at Ft. Keogh, Mont. Par. 5, S. O. 175, A. G. O., July 30, 1888.

Capt. Charles B. Byrne, Asst. Surgeon U. S. Army, is relieved from duty at Washington Bks., D. C., and ordered to duty at Ft. McHenry, Md. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Capt. Wm. C. Gorgas, Asst. Surgeon U. S. Army, granted leave of absence for one month, to take effect on being relieved from duty at Ft. Randall, Dak. Par. 4, S. O. 177, A. G. O., August 1, 1888.

First Lieut. Charles B. Ewing, Asst. Surgeon U. S. A., relieved from duty at Ft. Lewis, Col., and ordered to duty at Washington Bks., D. C. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 4, 1888.

Medical Inspector A. Hndson, detached from the "Trenton" and ordered home.

Surgeon C. H. White, ordered to the "Trenton" via Panama.

Asst. Surgeon John F. Urie, ordered to the receiving ship "Franklin."

Medical Inspector N. L. Bates, detached from the "Richmond" and to the "Pensacola."

P. A. Surgeon Frank Anderson, detached from the "Richmond" and to the "Pensacola."

Asst. Surgeon Isaac W. Kite, detached from the "Richmond" and to the "Pensacola."

Surgeon W. H. Jones, detached from the "Pensacola" and to the "Richmond."

Asst. Surgeon E. P. Stone, detached from the "Pensacola" and to the "Richmond."

Asst. Surgeon A. M. D. McCormick, ordered to special duty in the Bureau Med. and Surg.

Asst. Surgeon F. W. F. Wieber reports arrival home, having been detached from "Vandalia."

AUTHOR'S NAME WANTED.—We have on hand a paper on "The Antipyretic and the Abortive Treatment of Typhoid and Remittent Fevers," written on 56 pages of note paper. There is no name nor date nor address on any part of the mss. The author will oblige us by sending his name and address.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. XI.

CHICAGO, AUGUST 18, 1888.

No. 7.

ORIGINAL ARTICLES.

FRACTURE AND DIASTASIS OF THE SUPERIOR MAXILLÆ AND UPPER BONES OF THE FACE,

TREATED BY THE AID OF THE INTER-DENTAL SPLINT.
WITH TWO CASES.

*Read in the Section on Dental and Oral Surgery, at the Thirty-ninth
Annual Meeting of the American Medical Association, May, 1888.*

BY JOHN S. MARSHALL, M.D.,

PROFESSOR OF ORAL SURGERY, UNIVERSITY DENTAL COLLEGE,
CHICAGO; ATTENDING ORAL SURGEON ST. LUKE'S FREE HOS-
PITAL AND MERCY HOSPITAL.

Fractures of the superior maxillary bones are, from their protected location, quite rarely met with except in the alveolar process. The causes of such injuries are usually the result of the extraction of the teeth, or blows or falls upon the chin which separate or split open the walls of the alveoli. This is accomplished in the one case by the lateral force applied in breaking up the attachments of the roots of the teeth, and in the other by driving the teeth upwards and through their alveoli.

Such injuries, however, are never very serious, and rarely require special apparatus to maintain the fractured bones in their normal positions. I shall therefore lay aside all consideration of this class of accidents, and confine my remarks to the more serious injuries of this location, viz.: *Fractures and Diastasis of the Superior Maxilla and Upper Bones of the Face.*

This class of injuries (which I present for your consideration) have elicited very little attention either by the general surgeon or the oral specialist, and several of the most noted works on surgery make no mention of them whatever. This, I think, is due to the fact that such cases are of very rare occurrence.

Two cases have recently come under my care at St. Luke's Free Hospital, and have led me to make a somewhat careful examination of the textbooks and periodical literature bearing upon this subject, and so far, I have been able to gather together but nineteen cases which can be fairly classed as similar to those which form the inspiration of this essay.

Injuries to the bones of the face which cause

comminuted fractures and separation from the bones of the cranium, are always the result of great violence; like the passage of the wheel of a carriage over the face, falling from a great height, the kick of a horse, a blow in the face by some heavy missile thrown with great force, or a gunshot wound; crushing of the head between a moving elevator and the floor, the overturning of a carriage upon the occupant, or other heavy crushing force.

Such injuries are always serious and often prove fatal, either from shock, hæmorrhage, direct injury to the brain, or later complications.

In such cases as survive the shock of injury and escape immediately serious complications of the brain, a favorable termination may be looked for, and in many cases with very little deformity. This, however, will depend very much upon the character and location of the particular injury, the success obtained in readjusting the fractured and dislocated bones, and maintaining them in their proper positions.

For the purpose of reference I have grouped together the various published cases which I have found in my search, but shall only mention, very briefly, the extent of the injury and the percentage of fatality.

In speaking of this class of injury, Erichsen¹ says, "In some cases all the bones of the face appear to have been smashed and separated from the skull by the infliction of great violence." He mentions four cases of this form of injury: one reported by South, one by Vidal, and two which came under his own notice.

The injury in South's case was caused by the man being "struck in the face by the handle of a rapidly revolving crank," all the bones of the face were "separated and loosened" and so comminuted as to "feel like beans in a bag."

Vidal's case, also a man, was injured by "a fall from a great height and separated all the facial bones."

Erichsen's cases were both the result of falls from a considerable elevation and striking upon the face. The two former recovered, the two latter died in a few hours.

Packard² mentions three cases: one by Cotting,

¹Erichsen's Science and Art of Surgery, 8th ed., 1884, vol. i, p. 545. ²Ashurst's Int'l Encyclopedia of Surgery, vol. iv, p. 67.

in which the face was crushed by a cart wheel passing over it; another, brought to the Pennsylvania Hospital, in which the injury was received by the head being caught between the platform of a steam hoisting machine and the floor; and the last one, a case reported by Heath in his "Injuries and Diseases of the Jaws," which was under the care of Dr. Fyffe. The first and last cases recovered, but in the other death ensued in a few hours.

Heath³ describes two cases: The first came under his personal notice, and was "caused by the passage of a wagon wheel over the face, the bones were completely crushed and separated one from another, and death was instantaneous." The second one is that reported by Dr. Fyffe, and is the same case referred to by Packard, and will be described later.

Tiffany⁴ mentions a single case which was reported by Professor Christopher Johnston. The patient, a gentleman, was struck in the face by the walking beam of a steamboat. All the bones of the face were crushed and "seemed literally to consist of a bag of bones moving freely with inspiration and expiration, so extensive was the comminution." This case made a good recovery and an excellent result was obtained by supporting the superior maxillæ, by means of a silver wire passed through the cheeks and under the teeth, and uniting the ends of the wire over the top of the head by a rubber band.

Richard Wiseman⁵ published the report of the first case on record, and described the method of treatment. The patient was a little boy 8 years of age, who was, kicked by a horse and the whole upper jaw driven in, so that the finger could not be passed behind the palate. A flattened hook was constructed which could be inserted behind the palate and by extension constantly maintained by the hand of the patient and assistants, the bones were held in place and a good recovery followed.

Dr. Fyffe,⁶ of Westminster Hospital, London, has published the report of one case. This patient was thrown from a cab, the vehicle turning over upon him. The superior and inferior maxillæ were fractured, and the bones of the face detached from the skull so that the former "moved up and down in the act of swallowing." This patient also recovered.

Holmes⁷ describes a single case, in which the bones of the face were crushed and dislocated by a carriage wheel passing over the face, and in which, after recovery, there "was a disagreeable lengthening of the face" as a result of the injury; but more likely the result of the treatment.

Among the methods of treatment suggested are gutta-percha moulds, cork disks placed between the teeth, wiring of fragments and carefully adjusted pressure by the Hanesby truss.

Hamilton⁸ refers to one case which came under his own care, in which the upper bones of the face were fractured and torn from their attachments to the cranium, and had to be supported to keep them in place. The patient died on the twelfth day after the injury.

Mason⁹ reports a case which was under the care of Mr. Bickersteth, of Liverpool. A gentleman standing upon the deck of a steamer was struck upon the side of the face by an iron hook attached to the hawser, which had parted under a heavy strain. On examination "immediately after the accident, the mouth seemed to be filled by a piece of bloody meat, but on further examination, this proved to be the muscles attached to the upper jaw; the orbital plate of the superior maxilla of the injured side was found beneath the cheek, whilst the palate process with the alveolar ridge and teeth were, for the time, situated in the upper part of the pharynx, looking towards the bodies of the upper cervical vertebræ. The facial surface of the bone took the place of the roof of the mouth, jamming the jaws open. The soft palate was not torn, but considerably stretched. The superior maxilla of the injured side was turned completely upon its axis.

"The detached mass was replaced, the lower jaw firmly closed upon it for support, and the whole rapidly united with scarcely any deformity."

Mr. John Salter¹⁰ reported a case in which the superior maxillæ and malar bones were separated from their attachments with the skull, and so crushed as to feel like a mass of "loose bones."

Dr. Harris,¹¹ of New York, also reported a case of a little child only 2 years of age, who fell a distance of fifty feet to the pavement, striking upon the face and sustaining fractures and separation upon the median line of both superior maxillæ and palate bones. "Union had not taken place six weeks after the injury."

Mr. Houghton¹² describes a case in which the "superior maxillæ were so fractured and displaced as to make it impossible for the patient to protrude the tongue until after the bones had been adjusted to their normal position."

Bryant¹³ mentions one case in which "the superior maxillary bones were completely detached from the skull, and could be moved about in any direction, yet a good recovery ensued."

Agnew¹⁴ mentions the cases of Wiseman, Fyffe and Packard, but describes no new cases.

Garretson¹⁵ reports two cases. The history of

³ Heath's Injuries and Diseases of the Jaws, 3d ed., p. 59.

⁴ American System of Dentistry, p. 568.

⁵ Treatise on Surgery, 1734, by Richard Wiseman.

⁶ London Lancet, July, 1860.

⁷ Holmes' Principles and Practice of Surgery, p. 197.

⁸ Hamilton's Fractures and Dislocations, p. 102.

⁹ Mason's Surgery of the Face, p. 71.

¹⁰ Medical Times and Gazette, June 5, 1869, p. 600, from Mason's Surgery of the Face, p. 70.

¹¹ New York Medical Journal, vol. xiii, 2d Series, p. 214.

¹² British Medical Journal, Jan. 2, 1858, p. 15, from Mason's Surgery of the Face, p. 71.

¹³ Bryant's Practice of Surgery, p. 397.

¹⁴ Agnew's System of Surgery.

¹⁵ Garretson's Oral Surgery, 4th ed., p. 805.

The left side of the face was completely anæsthetic over the whole region supplied by the infra-orbital nerve, while upon the right side the upper lip and the wing of the nose only had lost sensation. The inferior maxilla was not injured and none of the teeth lost by the injury in either jaw.

The accident occurred by the patient being struck in the face by a piece of oak timber 12 inches long and 9 x 8 inches in diameter, which was thrown by a circular saw 18 inches in diameter, and revolving at the rate of about 3,000 revolutions per minute.

When the patient was admitted the chances for recovery seemed very small. Cold applications were ordered over the face, and stimulants hypodermically, if the temperature should fall below normal and the pulse below 60. Nourishment to be given if possible, and $\frac{1}{4}$ grain of morphia to allay pain.



Case No. 1. Cut. No. 1.—Three years before the injury.

March 16th.—Swelling of parts very great, both eyes closed and nasal passages completely plugged. Pulse 84, temperature 101.8°. Would arouse when spoken to.

May 17th.—Patient has rallied. Pulse 74, temperature 100°. Seems to be conscious. Swelling less.

On the 18th his temperature was normal and did not rise again above that point, and he rapidly improved in general condition from this date.

The treatment of the jaws was begun on the 17th, and consisted of first wiring the posterior fragments of both superior maxillæ to the anterior or middle portion by means of silver wire passed around the teeth on either side of the fractures. The fractured palate bones and the palatine pro-

cesses were then moulded into place as nearly as possible with the fingers, and the nasal bones lifted into position by means of the handle of an instrument. The lower jaw was then closed upon the superior teeth, care being taken to get a correct occlusion, and held in position by means of an occipito-frontal and occipito-mental bandage.

The following night the patient tore off the bandages several times. The nasal passages being closed he had great difficulty in breathing when the jaws were held tightly together. The bandages were therefore reapplied more loosely, but this allowed the injured bones to fall out of place, and defeated the object in view. This is the plan of treatment usually recommended by such authors as mention this class of injuries, but in my hands it has proved a signal failure, from the fact that the nose was so injured and the parts so badly swollen as to close the nasal passages for several



Case No. 1. Cut No. 2.—Shows condition after union of the fractured bones.

days, and therefore making it impossible to breathe with any degree of comfort except through the open mouth.

There must be considerable difficulty in any severe case in maintaining the position of the fractured and dislocated bones when this plan is adopted, and nearly impossible in those cases in which all the teeth were lost prior to the accident, for it is a well-known fact that as a rule edentulous jaws do not come in contact, and if they should, a normal occlusion would not be obtained, nor the injured parts prevented from slipping out of position. The plan of treatment adopted by Prof. Johnston is also objectionable by reason of the wounds made in the cheeks. In this case I was compelled to devise some other means,

one which would maintain the position of the fractured bone and at the same time leave the lower jaw free, so that the mouth could be open for the purpose of breathing. This was accomplished by adapting the principle of the Kingsley interdental splint to the upper jaw. Impressions of the upper and lower teeth were taken in modeling compound, by first moulding it on the upper teeth and while it was yet soft forcing the lower jaw upward till a correct occlusion of the teeth was obtained. This impression was trimmed to the desired shape and a one-eighth inch steel wire was imbedded in the sides upon a line with the ends of the teeth and then bent backwards upon itself opposite the cuspid teeth, and allowed to extend outside the cheek nearly to the lower border of the ear. From this was constructed a hard rubber splint with the wires attached. The splint was held in position by means of double straps

tion of the wounds, antræ and the mouth, with a 2 per cent. solution of carbolic acid every two or three hours until the discharges ceased, and the removal of a few spiculæ of bone from the nose and the wall of the right antrum.

The patient was discharged on May 14th, with small fistulous openings through the gums leading into both antræ at the points of fracture, and a small opening in the hard palate which was gradually growing less. There was also a slight deflection to the left of the nasal septum. The opening into the right antrum soon closed, as did that in the hard palate.

June 22.—Patient returned for the removal of the cicatrix in the right cheek, which was adherent to the maxillary bone.

June 25th.—Stitches removed and the patient discharged.

The opening into the left antrum remained pat-



Case No. 1. Cut No. 3.—Shows the apparatus in position.



Case No. 1. Cut No. 4.—Shows final result after the operation on the cheek.

attached to the wire upon each side and buckled to a close-fitting leather cap laced firmly upon the head. This proved to be a very successful appliance, as it held the bones in their proper position, permitted comfortable breathing and free movement of the lower jaw, which enabled him to talk and after a few days to masticate soft food.

Deep indentations were left in the under side of the splint in which the lower teeth fitted accurately when the mouth was closed. The object of this was to furnish a sure guide to the normal position of the upper maxillæ. Without this the correctness of the adjustment of the bones could not have been verified. The importance of this cannot be overestimated. The only other treatment was good feeding and thorough irriga-

tion for some months, with slight discharge into the mouth, but finally closed. Sensation has been entirely restored in both sides of the face.

Case 2.¹⁹—Henry S., German, æt. 35, occupation laborer, employed at Armour Packing House. Was admitted Oct. 7, 1887, one hour after the accident, which was caused by being struck across the bridge of the nose by a descending elevator while he was looking up the shaft. Was suffering from concussion of the brain when admitted. Examination disclosed the fact of a lacerated wound over the left eye and extending across the nose to the right eye, the finger could be introduced and readily passed down into each orbit and against the fractured edges of the nasal and

¹⁹St. Luke's Free Hospital Reports.

sphenoid bones. By taking hold of the upper teeth all the bones of the upper face were found to be movable, and when the mouth was open the upper teeth rested upon the lower and there was a peculiar and disagreeable elongation of the face. A later examination revealed the fact that the frontal sinus was crushed in, the nasal and lachrymal bones comminuted, and that all the bones of the face were torn loose from the skull on a line passing through the orbits; and that the superior maxillæ were separated from the other bones of the face. The inferior maxilla was not injured. Several loose pieces of bone were removed from the region of the inner canthus of each eye by the house surgeon. The wound was stitched, drainage tubes inserted, the lower jaw bandaged tightly against the upper teeth, and iced cloths ordered over the face and head. Pulse 60, temperature 97.4°. Stimulants administered

not be held sufficiently closed to support the fractured bones in their proper position without obstructing breathing by the mouth. This was necessary as nasal breathing was at the time impossible.

Oct. 24th.—Inserted an interdental splint, constructed after the plan of the one used in the preceding case, and supported it from the head by the same means. The case progressed favorably and was discharged on Dec. 3d, the bones having all united.

Dec. 24th.—Patient returned complaining of double vision. The lens of the left eye looked cloudy and traumatic cataract was feared.

April 1, 1888.—Patient seems entirely well. The double vision complained of has passed away and the lens has cleared up.

From the casts of the jaws in Case 1, it will be seen that the occlusion of the teeth is nearly, if



Case No. 2. Cut No. 1.—Six years before the injury.

freely. Profuse hæmorrhage occurred during the night, and vomiting of blood every few hours until two o'clock on the following day. He became conscious during the night, but the other symptoms seemed to give but little hope of a final recovery.

The temperature reached 102.2° on the 8th, at 4 P.M., and fell to normal on the 9th. No brain symptoms developed and the patient rapidly improved in general condition from this time. Swelling and suppuration were so extensive for several days as to render the adjustment of a splint impossible. The treatment consisted of stimulants and thorough irrigation of the wounds. The old method of bandaging was resorted to but proved a failure, for the reason that the lower jaw could



Case No. 2. Cut No. 2.—Final result.

not quite, normal. And by the photographs taken before the accident occurred (which I have been so fortunate as to obtain in both cases) and those taken since the patients were discharged, that in Case 1 the only deformity visible is a slight flattening of the right superior maxilla and the faint line of the cicatrix resulting from the incised wound in the cheek.

In Case 2 the occlusion of the jaw is equally good but the deformity is greater. This is the result of the loss of portions of the nasal bones and the external wall of the frontal sinus, and the adhesion and contraction of the cicatricial tissue over these places.

No. 9 Jackson Street.

DR. E. S. TALBOT, of Chicago: We have all

listened to Dr. Marshall's paper with unusual interest, as it treats of cases which demand prompt and positive treatment. Great force is required to produce an injury of this nature. Other complications, such as shocks, inflammation and secondary hæmorrhage are liable to ensue on account of the locality. If nature or treatment can overcome these difficulties another serious one presents itself in devising a means to hold the parts in place after putting them in proper position, until they have united.

A few years ago I was requested to assist Dr. Powell, of Chicago, in a case somewhat similar to one mentioned by Dr. Marshall. A girl, about 8 years of age, was leaning over an opening in an elevator shaft, head down, when she was struck on the back of the head by the elevator, the face forced to the sill of the building. She sustained a compound fracture of both superior and inferior maxillary bones. The parts were put in their natural position, the teeth being the guide. The jaws were bandaged together in the usual manner. The next morning we found the bandage off, with the bones slightly displaced. This is the point I wish to make: that where a bandage is used it is not certain it will remain in position twenty-four hours. After a little study we concluded upon the following plan, which I believe to be an infallible method of treatment: A skull-cap was made of cotton cloth to fit the head as far as the eyebrows and occipital protuberance. A splint for the inferior maxilla was made of gutta-percha (card-board, tin, or anything that can be moulded to the jaws will do as well). Having placed the pieces of bone in position and brought the jaws together so that the teeth occluded properly, adhesive strips were cut one inch in width, wound and fastened not only to the splint and the skull-cap, but also to the cheeks. The strips were applied in such a manner as to exert the proper force in the right direction. Three or four were then applied. One or two strips fastened to the splint, the cheeks and back of the neck, held all firmly in position.

The patient can be fed with liquids through a rubber tube. Should the teeth be missing, or but a few in position, occlusion would be impossible and the dental splint must be used. The adhesive strips can then be used in the manner described.

SEPTIC DYSENTERY.

Read in the Section on Practical Medicine at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY BEDFORD BROWN, M.D.,
OF ALEXANDRIA, VA.

I wish to submit for your consideration some remarks on the history and treatment of septic dysentery as the disease has at different periods come under my observation. Acute dysentery presents itself in two distinct types. One is the

simple benign catarrhal form. The other is the grave malignant type arising from septic causes, which has often desolated countries, cities, towns and armies. It may prevail either sporadically or epidemically, and it may be confined to a circumscribed locality to a neighborhood, and even to a single family or household.

Etiology.—Excessive and continuous heat is doubtless the chief predisposing cause of catarrhal dysentery. On the other hand, I think that the facts go to prove that there are other causes concerned in the development of the malignant septic variety which are more preventible and removable in their nature than the effects of solar heat on the human constitution.

I am impressed with the conviction, based upon long experience, that wherever and whenever malignant dysentery prevails, whether in a family, neighborhood, city, or army, there exists in that particular locality a septic cause in the form of unsanitary condition, either in the water consumed, or the air breathed by the inhabitants infected. I believe that when these causes exist in a locality where simple catarrhal dysentery prevails they will be ample to convert the simple into the septic form. Septic dysentery is a contemporary of typhoid and typhus fevers, hospital gangrene and erysipelas.

In armies surrounded by unsanitary influences, in hospitals, jails and prisons with impure air, uncleanly cities and towns, and indeed, wherever there is a bad hygienic state when dysentery prevails, its type will be modified by the existing hygienic influences, either for good or bad. Cleanliness is the fundamental principle of all sanitary science. Purity of air and water and cleanliness in all things—in person, in our homes, our villages, towns and cities, in our farms and barnyards—constitute the best preventive of septic disease. During the prevalence of excessive droughts when the supplies of drinking water are greatly diminished and become impure from the accumulations of putrescent animal and vegetable matter, septic dysentery is exceedingly liable to prevail. This fact was very clearly illustrated in a certain section of Virginia during a devastating drought two years since. It is said that the water of this entire section became impregnated with putrid organic matter. The unsanitary condition of these waters developed a widespread epidemic of septic dysentery of a peculiarly malignant and destructive character, which in point of fatality and rapidity of progress was unsurpassed in the annals of the disease.

During the very hot dry season of 1887 dysentery prevailed epidemically almost universally. In those sections where the sanitary condition was good the disease pursued its mild, simple course. But, on the contrary, in unsanitary locations the malignant type appeared. Some facts of interest bearing on the causes and prevalence of

septic dysentery during the recent war may, I think, be cited here with benefit to the cause of sanitary science.

In the months of September and October, 1861, a Confederate force of probably 15,000 was encamped on Great Sewell Mountain, in West Virginia, a region famed for the salubrity of its air and purity of its waters. The health of these troops at first was exceptionally good. But when, from want of simple sanitary arrangements, the surrounding country became covered with excrementitious matter, human and animal, and this had been conveyed into the sources of drinking water by excessive rains, a septic form of dysentery, diarrhœa and malignant typhoid fever appeared and desolated the army.

In the autumn of 1862 a Confederate brigade was encamped at Drewry's Bluff, on the James river. An epidemic of malignant septic dysentery appeared during this time, and prevailed among these troops with great severity, and until sanitary measures were taken to arrest it, treatment had but little result.

It was found that the entire surrounding section, having been occupied previously by troops, had become the receptacle of a vast quantity of excrementitious matter which, dissolved by occasional rains, had found its way into the fountains and streams of drinking water and infected the entire command. The surroundings of the encampment were thoroughly cleaned, the sources of water supply were purified, and lastly, sanitary pits were excavated for cesspools at a remote point. Subsequently to this we had occasional cases of dysentery, but no case of the malignant type. We found that the slightest inattention to the laws of health ensured the prevalence of septic dysentery. We found, also, when an army was in motion traversing rapidly new and unoccupied regions, though there were privations from deficient supplies of food, clothing and shelter, the health of the mobilized army improved, and it escaped septic diseases. On the contrary, when troops were confined to close quarters, as barracks or house tents, for a protracted period, septic influences accumulated in these quarters from the exhalations of effete materials from the human body, and the vast deposits of excrementitious matters in the immediate surroundings, which poisoned air and water. Under such circumstances septic diarrhœa and dysentery were liable to appear even in cold seasons, if not guarded against by rigid sanitary measures. A thorough and methodical system, instituted for the purpose of isolating, localizing and disinfecting excrementitious matters, human and animal, to prevent them from contaminating both air and water, afforded more perfect immunity from the prevalence of septic types of disease than any other measure.

It is altogether probable that the origin of a very large proportion of cases of septic disease is due

directly to the presence in the water we consume of the poisonous elements of excrementitious matter, both human and animal. In illustration of this statement I will cite an instance which came under my own personal observation more than thirty years since.

A family residing in a most salubrious location, on a mountain top, with delightfully pure air, was attacked with exceedingly malignant dysentery, apparently without visible cause. The prevalence of such a disease in such a locality created surprise, until it was discovered that a privy and a pig-sty had been located in a situation from which drainage into the fountain of drinking water was affected by every rainfall. The different members of this family had been consuming this contaminated water during the season, until their systems were infected by the poisonous matter.

Pathology.—Whether the septic infection in this form of dysentery is conveyed into the system by means of a specific bacterial germ, or by means of the formation of a toxic ptomaine in the dysenteric débris in the intestinal canal and absorbed into the circulation as such, are unsettled questions. But the widespread havoc committed on the entire system in the form of diphtheritic exudations and gangrenous necrosis of the mucosa of the large intestines, hepatic abscesses, adenitis, suppuration and softening of the mesenteric glands, disorganization of the vital properties of the blood, as the corpuscles, fibrine and albumin, softening of the parenchymatous structures, softening of the muscular tissue of the heart, abscesses in different organs, thrombosis, affections of serous membranes, embolic pneumonia and suppurative pleuritis in these cases of malignant septic dysentery, all indicate clearly a septicæmia as profound and caused by a poison as virulent as that of typhus or typhoid fever. These indications are so clear as to be unmistakable, and should afford us a guide to our hygienic and therapeutic management of the disease. Septic dysentery, as observed by myself in military and civil practice, has appeared under three forms, each form having some distinctive peculiarities.

Symptoms.—That type which I shall denominate the malignant, which is the most dangerous, has a decided tendency to pass into collapse at an early stage. The attack usually begins with a chill followed by fever and great general prostration. The fever is usually of brief duration. Extreme depression of the vital functions from the beginning is characteristic of the disease. The temperature in these cases soon falls to a subnormal point. The surface and extremities become cool, clammy and livid. The pulse is small, rapid and feeble. Nausea and vomiting are usually present. The tongue becomes flabby and pale. The discharges are composed of dark, bloody mucus, prune-juice in appearance, and so offensive in odor as to resemble that of gangrenous matter.

In this form of the disease, after the early stages, pain is not a conspicuous symptom and is often moderate. At this stage the evacuations often become involuntary from relaxation of the sphincter. The countenance is pale, haggard, sallow, dull and listless. The patient is exceedingly languid and indisposed to move, to think, or even to respond to questions. He is indifferent to all surrounding circumstances or consequences. If reaction is not established in these cases they often terminate in forty-eight hours. The tendency in all these malignant septic cases is to gangrene and necrosis of the inflamed mucosa. The presence in the inflamed intestine of these diphtheritic exudates and gangrenous sloughs when undergoing the putrefactive process must generate a toxic material that is capable of producing a virulent septicæmia when absorbed into the circulation.

The Hæmorrhagic Form.—I have observed a dangerous form of septic dysentery accompanied with such decided hæmorrhagic symptoms as to entitle it to that term. In these cases in the early stages the evacuations are muco-sanguineous. But very soon these are accompanied with considerable and exhausting hæmorrhages, composed of a dark-colored fluid blood which has no tendency to coagulate. These hæmorrhages, in more or less quantity, occasionally amounting to as much as twelve ounces, recur at intervals during the attack, and are very exhausting. These hæmorrhagic discharges often contain mucous, diphtheritic exudations and sloughs. They doubtless are due to the breaking down of gangrenous tissue and rupture of vessels of some size. This is, in my experience, one of the most fatal varieties of dysentery. The vital prostration in this class of cases is always extreme and much resembles in general features the malignant grade of typhoid fever, excepting the conditions of the mental powers, which usually remain clear until the last. Even when the frequency of the pulse reaches 150, the extremities and surface cold, and the thermometer indicates a subnormal temperature, the mind is often unaffected. I have only seen this form of dysentery occasionally during the prevalence of very malignant epidemics.

The adynamic type of septic dysentery begins with tormina, tenesmus, and frequent muco-sanguineous discharges. The attack is usually ushered in with distinct chill, followed by fever, but not of a high grade. Very early in the attack adynamic symptoms make their appearance. The tongue becomes dry and brown, the abdomen tympanitic and tender on pressure. The pulse is always frequent and feeble. The temperature rarely exceeds 104°. Delirium is an early and marked feature. The evacuations consist of very offensive, thin, bloody mucus. Patients in this peculiar, somnolent delirium often lose control of the bowels. This form of dysentery is usually some-

what protracted. It not unfrequently continues from two to four weeks.

Treatment.—In the treatment of septic dysentery there are several important objects to be considered. To remove systematically from the intestinal tract all infectious fæcal and dysenteric matters; to disinfect that canal; to sustain the depressed nervous and circulatory systems, and replenish the poisoned blood, are leading considerations. The primary object is to clear the intestinal canal thoroughly of all accumulations that might prove a source of infection. A ten grain dose of the mild chloride of mercury combines the properties of a thorough cathartic with decided antiseptic powers. In the malignant or collapsed form the tendency is to sink down into speedy and hopeless collapse. It is necessary to counteract this tendency by prompt measures, and to establish reaction by the use of the most potent cardiac and nervine tonics and stimulants. At the same time active disinfection of the intestinal tract should be practiced. I have found a combination of brandy and port wine in equal parts act well as a restorative. Of therapeutic agents the most effective stimulant in my knowledge is found in the following combination:

R.	Morph. acetatis.	gr. ij
	Strychnia.	gr. ss
	Ext. belladonna	gr. ij
	Bismuth salicylate	3 ij
℞.	ft. pil xxiv.	

A pill is to be taken every three hours. In connection with this the one-hundredth of a drop of nitro-glycerine, in granules or solution, should be given every alternate period or interval, until the tendency to collapse is corrected, and reaction is established. In cases attended with great prostration these agents tend to strengthen the action of the heart, contract the relaxed arterial system, increase arterial tension, correct general relaxation, tone up the depressed nervous system, and above all others, to arrest collapse.

In a case of this kind occurring during an extensive epidemic in September last, in which case there was early tendency to collapse, manifested in extreme vital prostration. The patient was lethargic and somnolent. The surface was cold and clammy. The thermometer indicated a temperature under the tongue of 96½°. The pulse was scarcely perceptible and exceedingly frequent. The patient had lost all desire for food or drink. After the failure of all possible diffusible stimulants, the above combination of remedies was resorted to with the effect of restoring reaction. In another case, accompanied with exhausting hæmorrhage and collapse, the same remedies established reaction. When this has been accomplished and this class of remedies can be dispensed with, then sulphuric and hydrochloric acids in combination may be resorted to with advantage, in the following manner:

R. Acid hydrochloric, dil.	℥ij
Acid sulphuric, dil.	℥iij
Aquæ	℥v
Syr. aurantii cort.	℥ss
Tinct. opii deod.	℥ij
mp.	

A tablespoonful diluted every three hours exerts a decidedly tonic and antiseptic effect in these cases. The chlorine and sulphur held in solution in these acids imparts to them an antiseptic and germicidal power possessed by few other agents. Septic condition of the intestinal canal indicated by tendency to gangrene and sloughing, diphtheritic exudations, putridity of dysenteric débris, manifested in the intensely foetid discharges, and those symptoms of general septicæmia resulting from the local disease, call for local antiseptic treatment.

Antiseptic irrigation becomes as much a necessity in these cases, to prevent or arrest general infection of the system, as in the septic puerperal uterus, and is based upon the same principle of removing all infectious débris, and disinfecting the diseased organ. The absolute importance of the disinfectant treatment of local diseases has only been appreciated as a means of preventing constitutional infection, since the nature and action of sepsis has been understood. The principle applies with equal appropriateness to the study and treatment of the malignant septic forms of dysentery as to other kindred affections.

The first antiseptic irrigation practiced should be composed of warm water and carbolie soap, or, in other words, carbolie soap-suds. This always cleanses the entire tract thoroughly, and not only affords comfort, but produces a change in morbid action. Subsequently antiseptic irrigation should be continued by means of a solution of the peroxide of hydrogen in an 8 per cent. strength. While my experience with this remedy as an antiseptic in this affection is limited, this experience has been so favorable that I am compelled to regard it as one of the most effectual antiseptics and disinfectants known. At the same time it is free of danger. Thrown into the large intestine in malignant dysentery, it arrests putrefaction in the débris of broken down tissue and discharges, corrects fœtor, prevents infection, and exercises an important influence in cleansing and healing the ragged and unhealthy ulcers left in the mucosa of the large intestine after the separation of sloughs.

I find that the best method of conducting antiseptic irrigation in these cases, to reach all diseased parts, is to place the patient in the knee-elbow position, and insert in the rectum a flexible tube, through which the enema is given by Davidson's syringe. Or, if this is not practicable, then the patient is placed on his right side, to permit the irrigating fluid to pass through the arch of the colon. Boracic acid in a 5 per cent. solution is also a good antiseptic for irrigating the bowels in septic dysentery. In the treatment of the hæmorrhagic form and the more protracted

adynamic type, when the system has been subjected for a length of time to the prostrating influences of septicæmia, these irrigations, practiced systematically, always modify the local disease and improve the general condition. It is in this form of disease that I have found certain styptic solutions of iron so valuable. The solution of the permanganate of iron \mathfrak{ss} , aqua \mathfrak{z} v, simple syrup \mathfrak{ss} ; or the tinct. of the chloride of iron \mathfrak{ss} , aqua \mathfrak{z} vj, syr. limonis \mathfrak{ss} , acid phosphoric dil. \mathfrak{z} ij, in doses of a tablespoonful, combined with 10 or 20 drops of the deod. tinct. opium, every three hours, are admirable tonics to the general system, and alteratives of value on the local affection.

In the hæmorrhagic tendency or in those cases with copious, thin, offensive discharges of bloody serum, these preparations are of peculiar value.

The oil of turpentine in teaspoonful doses in emulsion is also appropriate in the treatment of these cases, given three times daily.

The use of Cathartics in Septic Dysentery.—I regard the use of certain cathartics in this form of dysentery as eminently necessary to carry out in full the principles of antiseptic treatment. We must not only apply chemical agents to arrest the process of sepsis, but also use means to remove the prime causes of infection. In cleansing a cesspool we must not only disinfect its contents, but remove them, so that there may be complete isolation to prevent infection. Almost invariably following the action of a cathartic, mercurial or oleaginous, there is improvement in the general and local symptoms. The symptoms of septicæmia and constitutional suffering improve, while the tormina, tenesmus, nausea and vomiting, abdominal distension, and frequency of intestinal action, diminish for the time, and often permanently. Now what is the rational explanation of this therapeutic result? It is simply that all septic fecal and animal matter that might infect the system has been removed. In the beginning of treatment, as an antiseptic cathartic a 10 gr. dose of the mild chloride of mercury is superior to all others. But the castor-oil and turpentine combined with 10 drops of tinct. of belladonna given occasionally, subsequently, is the most thorough in its action in removing all accumulated matters with the least injurious results. In removing this putrid infectious matter we are aiding materially the great cause of antiseptis.

In the adynamic type of cases occurring during the epidemic of the past season, accompanied with low grade of fever, dry tongue, quick pulse, delirium, offensive, dark discharges, tympanites, with indications of septicæmia, in conjunction with the local disinfection, I used with much benefit a combination of quinine and antifebrin, of each 2 grains every three hours, and 5 grains of naphthaline, or naphthol, at equal intervals.

I am constrained to believe that in these ma-

lignant septic cases of dysentery we do not always realize the extent of the depressing influence on the vital functions of the existing septicæmia. Neither do we always appreciate the importance and necessity of the use of nutritious stimulants and restoratives in this class of cases. I am impressed with the conviction that many of these cases go down from want of attention to this question.

Thirty-five years ago, in an epidemic of malignant dysentery that came under my observation, the most of the bad cases which recovered were saved by the liberal use of stimulants, nourishment, an occasional mercurial cathartic, and anodynes. Some of these patients, who were threatened with collapse, consumed as much as twelve ounces of brandy per diem.

We must not depend alone on antiseptics and tonics to relieve septicæmia. New blood must be made, to repair the decay of the old. And the tissues, which are undergoing rapid disintegration, must be renovated, or death will ensue. This can only be accomplished by the use of every means to sustain the system, the constant tendency of which is to sink down into collapse. In this form of dysentery there exists a dangerous blood depreciation, that renders the use of the most concentrated stimulants necessary. Milk punch, milk, eggs and brandy, or egg-nogg,¹ beef tea made with lean beef and barley, Scotch broth prepared with lean mutton and barley, constitute valuable aliments in this affection. In diseases with great vital depression and loss of digestive power, we should shape the preparation of food so as to make it as tempting as possible to the palate which relishes nothing, and as digestible as one can prepare it.

Opiates in this, as in other forms of dysentery, cannot be dispensed with for the relief of pain and to procure needed rest. But their reckless employment for the prolonged suppression of the discharges is, in septic dysentery, not unattended with danger. After the action of a cathartic, when the alimentary tract has been cleansed of its septic contents, and secretions restored, then is the proper time for the administration of opiates. On the other hand, opiates should be followed by cathartics for the removal of all fecal and animal matter that for the time may have accumulated. We should never lose sight of the fact that dead animal matter, whether in the uterus, puerperal or non-puerperal, in the bronchial tubes, in the pleural cavity, in tuberculous cavities, in the bladder, in the cranium, or in the intestinal canal, when retained sufficiently long to undergo decomposition, generates infectious matter that will

endanger health and life. Here is the principle that should guide us in the administration of opiates. They are astringents of the first order, and when injudiciously used may lock up in the intestinal canal, which is in truth the great sewer of the system, matters that are constantly undergoing decomposition, and generating septic material of a deadly poisonous character.

Some years since I witnessed an instance in which a rapidly fatal case of septicæmia, accompanied with peritonitis, occurring in a simple case of catarrhal dysentery, resulted from the continuous use of opiates for forty-eight hours, which caused retention of putrescent matter in the intestines. In this case there was speedy generation of septic matter in the intestinal canal from suppression of discharges, supervention of symptoms of septicæmia, and finally peritonitis.

NOTE ON THE TREATMENT OF CATARRHAL INFLAMMATIONS OF THE UPPER AIR-PASSAGES.

BY ELY McCLELLAN, M.D.,
SURGEON UNITED STATES ARMY.

Early in January of the present year, I was asked by a patient to call on Dr. T. F. Rumbold, of St. Louis, Mo., and obtain some information as to a case which had formerly been under his care. At the time of my visit I had no knowledge of Dr. Rumbold's specialty or of the valuable therapeutic methods he has originated. I was suffering at the time with catarrh, which was increased by a "bad cold," while my malaise was intensified by physical prostration attending severe and prolonged over-work.

In the course of our conversation, Dr. Rumbold noticed my condition. An examination followed and a treatment was offered which I was glad to accept, though no flattering assurances were held out. The sense of relief which I obtained from the first application was most grateful and encouraging. I placed myself under Dr. Rumbold's care, and the results obtained in the amelioration of my distressing symptoms filled me with new hope. True I have not been free from the necessity of occasional applications. The accession of fresh colds require treatment, yet comparing my condition to-day with what I was mentally and physically six months ago, I am restored to my original optimism.

Up to the date of my visit to Dr. Rumbold, I had treated myself carefully, assiduously, and with the most approved appliances, but only to encounter constant disappointments which forced upon my mind the fact that so far from improving my condition I was constantly growing worse. From Dr. Rumbold I obtained, not only relief from my distressing symptoms, a reasonable

¹A further experience in the use of the favorite American drink, egg-nogg, as a diet and nutriment in adynamic types of dysentery, is superior to all others. During the present season I have, by this nutriment alone, sustained for many weeks some of the most malignant cases, both in adults and young children. In two cases of this kind life was sustained alone by this diet during most dangerous attacks lasting six and seven weeks.

prospect of a more comfortable existence, but the knowledge of a practicable and thorough method by which, at least relief, can be extended to all cases of nasal catarrh.

Encouraged by the success that attended the treatment in my own case, I resolved to extend my experience in the treatment of both acute and chronic inflammations of the upper air passages. I am on duty at a depot for recruits, where large numbers of men are constantly arriving. These men come from all classes of life, and very many of them are directly influenced by the abrupt climatic changes to which they have been subjected, thus affording an excellent field for extended experiment. The results gained may be briefly stated. In a considerable number of cases of acute inflammation of the upper air passages treated by the Rumbold method, the attack in the majority of cases was aborted; of those remaining the severity was greatly mitigated, while in but one case did the disease resist treatment, and the inflammatory action result in suppuration. In all chronic cases treated the advantages of the method were equally apparent. Each succeeding case demonstrated the exactness and facility with which the cleansing process is accomplished, and the thoroughness of the application to the inflamed surfaces, and the encouraging results thereby obtained.

I do not propose in this paper to proceed to any exhibition of cases, but simply to present a statement of the therapeutic measures that have been instituted, successfully practiced, and presented to the profession by Dr. Rumbold, the efficacy of which is well known and recognized in his place of residence, but which as yet is but little known or talked of in the great medical centres.

In the treatment of the inflammatory conditions that result in rhinitis and its sequelæ, as well as in the defined stages of the disease, it is recognized as the first essential to the successful treatment that the abnormal secretions be removed from the mucous surfaces, and that having been accomplished, the second step, which is of vital importance, is the application of suitable medications to the cleansed surfaces. The difficulties in the way of filling the first indication are well-known to all those who have made the attempt. Success demands that every portion of the nasal, pharyngo-nasal cavities, as well as the pharynx and larynx, shall be cleansed. This difficult procedure having been accomplished, the second essential to the cure presents itself. A remedy or series of remedies must be selected by which the inflammatory action may be subdued without inflicting a lasting injury upon the mucous membrane.

Water is the medium generally employed to meet the first indication, but as water *per se* is an irritant to the Schneiderian membrane the attempt is made to render nugatory its physiological ac-

tion by the presence of one or more of the salts or of other agents. This application is accomplished by the nasal douche, syringes, or by the various spray instruments, by means of which a greater or less flow of medicated water, governed by a greater or less propelling power is made to flow through the choanæ, by gargles and by the use of probangs and brushes applied through the mouth.

The question of importance is, do these procedures absolutely clean the membranes of the nasal chambers? Does the cleansing fluid reach to the superior and posterior surfaces of the nasal and pharyngo-nasal cavities? Does it remove all the secretion which may be present, or does it simply tunnel out for itself a channel through which it may unobstructedly flow?

My own impression based upon an experience of many years, is that the upper air-passages can never be thoroughly cleansed by a water douche of any kind unless a very large quantity of the fluid be used, and without its being applied with a force which must be hazardous to the integrity of the mucous membrane; and one is forced to the conclusion that because the nasal cavities in the subjects of chronic inflammation have not been absolutely cleansed from the abnormal secretions by the methods most generally advocated, nasal catarrhs are classed as intractable, and have become an opprobrium to the general practitioner. Nor are probangs armed with sponges, absorbent cotton, or swabs of linen or cotton fabrics, or brushes of Camel's-hair more efficacious when applied from behind the soft palate. To detach a mass of tenacious mucus from an inflamed surface by the application of force is a laborious and oftentimes thankless task, and when accomplished it is almost always at the expense of the tissue from which it is detached. The gargle is now considered obsolete and useless when applied for such purposes.

To Dr. Rumbold is certainly due the credit of having devised means and apparatus by which a complete cleansing of the entire surface of the nasal and pharyngo-nasal cavities may be accomplished, with comfort to the patient and to the entire satisfaction of the operator. The menstruum employed in the cleansing process is vaseline warmed to liquefaction. The application is made by metal spray producers armed with a cup large enough to hold a drachm of melted vaseline. The force applied in the application is compressed air, either from a rubber hand bulb or from a fixed receiver for compressed air. The force of the compressed air is in no case to exceed a pressure of seven pounds to the inch. To make a successful application four spray producers are required. One, by means of which the warm spray is thrown into the nostrils, and by movement of the instrument is made to reach every portion of the nasal cavity. A second, in-

troduced behind the soft palate sprays the pharyngo-nasal cavity. A third, also passed behind the soft palate cleanses the posterior nasal cavity, throwing the spray under the inferior, middle, and superior turbinated processes. A fourth, cleanses the fauces, the tonsils and the lower portions of the pharynx.

It is an assured fact that the warm vaseline will readily detach all mucus however inspissated it may be from the walls of the upper air-passages. A careful examination after each application will always discover the inflamed mucous surfaces free from secretion and covered with a thin coating of the vaseline.

The mucous membranes having been cleansed from abnormal secretions the remedies remain to be selected by means of which the inflammatory action may be arrested, and the tissues may be restored so far as may be possible to their normal condition. The application of medicated inhalations have been practiced since the days of Hippocrates and Galen, and almost endless are the agents which have been from time to time adopted, lauded, but finally abandoned. Delavan writes on this subject: "At present so many different therapeutic methods are proposed and strongly advocated by good authorities, that it is impossible to refer to any as established."

The majority of agents recommended are, strictly speaking, irritants to the mucous membranes. It is well-known that water itself is an irritant, and yet water is the vehicle almost invariably employed. It is significant when we read Eichhorst's statement, when treating of chronic catarrh, that "the treatment is discontinued for a few days if pains and violent inflammation develop." Prosser James continually calls attention to the necessity of not causing irritation by the strength of solutions so employed. Bellamy recommends the employment of "weak solutions" by the nasal douche, and instances might be further quoted showing the growing tendency to the abandonment of heroic treatment in the diseases of the throat and nasal cavities, although the galvano-cautery is still at the head of the procession.

The departure of Dr. Rumbold from the established line of practice for the successful treatment of catarrhal inflammations of the nose, throat and ears is best announced in his own words. In the treatment of all such cases, the following is positively indicated.

1. Non-irritating agents only should be used.
2. The means of making these applications should not produce the least irritation.
3. The whole of the irritating catarrhal secretion should be removed.
4. The agent employed should have sufficient solidity to remain for several hours on the inflamed surface to protect it as much as possible from the irritating influence of the air, and it

should possess also such properties as will prevent the future secretions from becoming acrid.

As essentials to perfect success it is insisted that, every portion of the diseased surfaces within the nasal and pharyngo-nasal cavities must be treated. That force enough must be exerted to remove all morbid secretions from the diseased surfaces, but that an excess of force must be avoided. That the medicament must be applied quite warm.

A long experience has led Dr. Rumbold to the selection of the following remedies as those from which the most constant beneficial results are to be obtained, viz.:

1. Vaseline pure.
2. Vaseline with eucalyptol.
3. Vaseline with gaultheria.
4. Vaseline with carbolic acid.
5. Vaseline with pinus canadensis.

The applications to the nasal and pharyngo-nasal cavities are made with all the remedies, with the exception of the gaultheria and the pinus canadensis. The two remedies last named are applied only to the larynx and to the pharynx.

The applications are made at intervals of from twelve to twenty-four hours, until the severity of the symptoms are relieved, and then every fourth or fifth day.

Constitutional treatment is also necessary, but a consideration of that subject does not come within the scope of this paper.

Jefferson Barracks, Mo., July, 1888.

A NEW CLINICAL SPHYGMOGRAPH.

Read by title in the Section on the Practice of Medicine at the Thirtieth Annual Meeting of the American Medical Association, at Cincinnati, May, 1888.

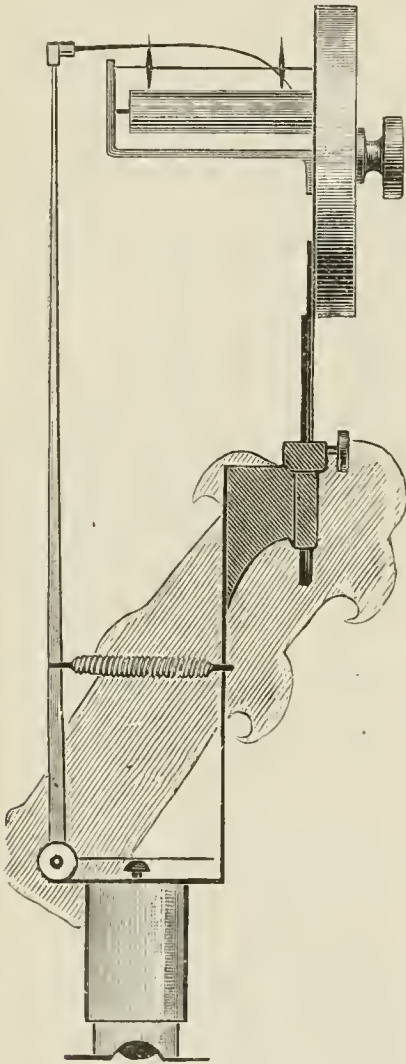
BY ROBERT T. EDES, M.D.,

OF WASHINGTON, D. C.

The defects of the different forms of sphygmograph in use are so well known to those who have worked with that fascinating, but capricious instrument, that I will not formally set them forth, but advert to them in connection with the description of the devices employed to avoid or minimise them.

This sphygmograph consists in a base composed of a piece of metal tubing with a broadened foot, sliding within another, and supported by a pretty stiff spiral spring. This slide and spring are intended only for the support of the instrument and regulation of the pressure, but in no way for *measuring* the pressure. Within this base moves the pad or plunger with a stem. The top of the stem bears against the arm of a bent lever, the long or writing arm of which is made of wood for the sake of lightness, and which carries on its summit the writing needle. The smoked paper is carried horizontally under the needle and receives the trace.

Pressure is made by a fine spiral spring attached to the long arm of the lever.



Some of these points will be better understood by reference to the well-known sphygmograph of Pond, which has been so largely used in this country and commended abroad, and which is undoubtedly for clinical purposes (when applied without the arm rest) much the most convenient (unless Dudgeon's, which I have not used, be an exception).

This instrument resembles Pond's in the sliding base, the upright lever, and the horizontal paper. It differs in the omission of the India rubber membrane which has so many defects to counterbalance its one merit of convenience. It deteriorates and loses the essential property of a spring, elasticity; when renewed it can never be adjusted twice alike; and most important of all, it

carries a certain, or rather uncertain, proportion of the pressure made by the wide base upon the neighboring tissues over to the pad, so that the graduations on the sliding stem can never represent the pressure on the artery alone, but on the neighborhood, and especially on the radius and the tendon of the flexor carpi radialis. These criticisms may not apply to the other form of base used with the Pond.

The lever in this instrument is but one, and there is no arrangement by screw or otherwise for adjustment of the pad to the writing levers to suit different degrees of the pressure.

FROM THE SAME PULSE.

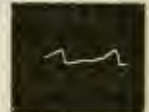
Marey.



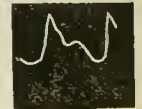
Pond.



As taken by new Sphygmograph.



Same, magnified vertically and reversed.



As a result of this we have one apparent disadvantage and several real advantages. The latter are: First, that the position of the tracing upon the paper is itself an indication and record of the pressure upon the artery, so long as the spring remains the same. Any given pressure exerted upon the pad will always draw the needle to the same place. The pressure may be varied while the paper is in motion, and its effect on the tracing thus becomes evident; or what takes but little more time, and is more elegant, several tracings at different pressures may be taken on the same slip. This implies, as one familiar with the instrument will at once notice, a much diminished amplitude of motion in the writing point. The tracings do not to the naked eye present the ordinary appearance, but look like the very feeblest to be taken with any of the other forms. Second, the diminished motion of the lever removes one source of error which has always been recognized, and which has been partly avoided in Marey's by connecting the two levers, but which remains in Pond's owing to the weight of the upper lever and counterpoise. It has even been exaggerated in a very sensitive and beautiful instrument made under the direction of Dr. Hopkins, of Buffalo. This source of error is the acquired velocity of the moving parts, which may carry the point beyond the level to which it comes

by the action of the artery, thus making the elevations higher and the depressions lower than they should be. I cannot see why this instrument, leaving out the error of friction, should not give an absolutely faithful transcript of the curve which is described by the surface of the artery.

Errors due to looseness of joints are also avoided.

The want of distinctness in the tracings would, however, be far more than an offset to all these advantages; would, in fact, make the instrument almost worthless, if it were not for a device never before introduced into sphygmography. It is not original with me, but depends upon a suggestion from my ingenious friend, Dr. William P. Bolles, of Boston. It is the use of a cylindrical lens for reading the sphygmograms. This multiplies the amplitude of the tracings in the vertical direction about three times (or a stronger one might be used which would give four or five). The tracings which had before had so little variation in level as to seem meaningless, at once assume the appearance which will be recognized at once as corresponding more or less nearly to the common form.

The lens I have employed is composed of two of the strongest plano-convex cylindrical glasses, having together a focal length of 5 cm. They were procured for me square, that is before being mounted in the round frames in which they are supplied to test glass cases, by my friend, Dr. Swan M. Burnett, and mounted with the plain surface in apposition.

With the arrangements as now made which could obviously be varied considerably, the lever (short arm .9, long arm 40.2), amplifies about 11 times and the glass three or more, according to its position, thus giving 33 in the whole, or about that of Pond.

$$\frac{\text{Product of long arms}}{\text{Product of short arms}} = \frac{40 \times 30}{4 \times 9} = 33.3.$$

With the strength of spring used the pressure needed to start the writing, or to make the needle write near the lower edge of the paper is 30 grams; near the upper edge 90; and in the middle 50 to 75. This range seems to be sufficient for ordinary pulses, but it will probably not cover the whole range required for exceptional cases. It certainly will not admit the high range spoken of by Marey and Burdon-Sanderson, but on the other hand, Brondel says it is very rare that pressures of 80 and 155 are required. It would not be difficult to have a second spring to be used in exceptional cases, or even for the higher range of pressures, so that the tracings might be written on two scales, like the two staffs for music, instead of on an entirely indeterminate one as at present with the adjustable instruments. The higher scale may also be obtained by shifting the spine to a higher position on the lever.

The manner of holding and applying an in-

strument I believe to be of no little consequence. It is the ease of management and little trouble of the Pond, when used without the rest, which have made it so deservedly popular. The pads and straps of some of the others are sufficient to prevent their being freely employed, and thus acquiring a real clinical value, and I knew of an instance where the use of the Pond was nearly abandoned in a hospital, because it could not be made to work with the arm rest. I believe the almost trivial device employed with this instrument makes this even more convenient than the Pond.

This is a slip of metal connecting the base with the upright that carries the clock-work, and acting as a brace, which is so curved, and supplied with side pieces as to fit on the fore finger. The instrument is thus carried on one finger, while the middle finger can feel the artery if desired. While the instrument is applied, the thumb can stop and start the clock-work, and the left hand is free to introduce and receive the paper; or be itself the object of examination.

I submit a number of tracings which may be examined with two or three of the highest cylindrical lenses to be found in the test case of the ophthalmologists. They are not intended to illustrate types of disease, but simply to show the working of the instrument. It will be noticed that they read in the opposite to the usual direction. This is because the clock-work of a Pond's sphygmograph, made to work with a different arrangement of levers, was used. If a new piece of clock-work were made it would, of course, be arranged to run in the usual direction.

GRADATION OF LENSES.

Read in the Section on Ophthalmology at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May 8, 1888.

BY DUDLEY S. REYNOLDS, A.M., M.D.,

PROFESSOR OF GENERAL PATHOLOGY, HYGIENE, AND DISEASES OF THE EYE AND EAR, IN THE HOSPITAL COLLEGE OF MEDICINE, MEDICAL DEPARTMENT OF CENTRAL UNIVERSITY OF KENTUCKY, LOUISVILLE.

The lenses employed for testing refraction, as they are obtained from the best makers, are graded by three separate systems, namely: by focal lengths in inches, by focal lengths in metres and centimetres, and by the radius of curvature, on the basis of a unit representing the maximum angle of retraction, which, according to the old astronomers, is equal to the quadrant of a sphere, or 90° of its circumference.

A series of lenses constructed of crown glass, having an index of refraction of about 1.53, each lens representing a definite fractional part of the unit, may be said to represent the only scientific series of lenses, because these are graded into such fractions as to represent a definite angle of radius, as, for instance, the most powerful convex lens in the

series in ordinary use is one-half, and represents, not, as some suppose, 2 inches of focal length but, in fact, 45° of radius of curvature, or half the unit of astronomical refraction.

Now, some recognition must be given to the size of the disc represented by the circumference of the unit, or the lens whose refracting angle represents 90° , may be wholly unsuited to the purposes intended. To arrive at uniform results, it is manifestly clear the instruments employed should be identical, and all the conditions governing the process precisely uniform. To establish a standard series of lenses, Vitaleo and Baptista Porta constructed spheres of crown glass and, by experimental tests, were able to determine that the maximum angle of refraction of light falling upon the surface of such a sphere equalled one-fourth of its circumference, or 90° of its radius. A separate lens, so as to represent the same amount of curvature, it was found would focus light at a distance nearly equal to one-half the diameter of the sphere from which this segment was taken; that is to say, light passing through such a segment, united at a point distant from the nodal point of the segment itself equal to one-half the diameter of the sphere of the same radius.

Now, if a sphere 2 inches in diameter, and another sphere 3 inches in diameter, be taken for experiment, it will be found that the focal length of the quadrant of the first sphere will be about 1 inch, whilst that of the second will be about $1\frac{1}{2}$ inches; so that any attempt at grading lenses by focal lengths must necessarily be utterly unavailing for scientific purposes.

Few who have not made the experimental test would be inclined to recognize the difficulties attending the measuring of the actual focal lengths of lenses. If a dark box, into one end of which the skylight, through an open window, is allowed to pass, the intercepting lens will, if the box be small, collect and refract only the central portion of the pencil of rays entering it, and the result will be, if the light be bright, a stronger penetration and greater focal length will be registered than might be obtained by making the test with a series of points, of artificial light taken from a white or frosted background. If a large box be used—always presuming, of course, that the lining of the box shall be perfectly black, with a dead finish, so as to prevent reflection—so much light will have been absorbed before the focal point has been reached that it will be exceedingly difficult to define the focus, and, therefore, errors of 2 or 3 inches in measuring are commonly committed. If there be any asymmetry in the grinding of the lens, this will not appear in such a test. If two dotted lines, intersecting each other at right angles in the form of a cross, be employed, more definite results can be obtained, because, if any one of the dots in either of the two crossed lines should appear of irregular form on the polished side of the

frosted glass register, it would at once show asymmetry in that part of the lens; and if, by revolving the lens, it should turn out that points in corresponding portions of the several lines were distorted, the asymmetry of the lens would thus be established beyond doubt, and might even be designated by a mark on the surface to show the precise part defectively ground.

If any coloring matter be present in the glass, it will cause halos in certain portions of the field represented by the dotted lines on the frosted glass register. To make this test, of course it is necessary to have an instrument constructed with an opaque metallic disc, perforated by circular openings across the centre, and on the face of the disc another line formed in a similar manner, at right angles to the first, so that they shall cross exactly in the centre of the disc. Against the surface of this perforated metallic disc a piece of frosted glass should be placed. A lamp flame or a gas jet will furnish the best source of illumination. Having a positive lens between the source of light and the perforated disc, uniformity of illumination may be secured. The lens to be tested should then be placed in a clasp on a beam, supplied with an arrangement for sliding both the disc containing the perforated plate and another frosted glass disc at the opposite end of the beam, upon the surface of which the points of light refracted by the lens being tested, at the centre, are collected. On the surface of the beam, from the centre to the distal end, the different points at which the light is focused on the registering or collecting disc may be marked in a scale, which shall be used for the determination of the refracting powers of spectacle lenses, or other lenses of similar character, which it is designed to measure. Snellen's phakometer fulfils these indications, and is, in its improved form, the most accurate and satisfactory instrument for determining the quality and the refracting powers of lenses, whether spherical, cylindrical or compound, yet devised.

In his preface to the English translation of Scheffler's "Theory of Ocular Defects and of Spectacles," Prof. Brudenell Carter, of London, says: "It is well known that much dissatisfaction has been felt with the irregular intervals between the lenses in the test-cases commonly sold, and that great confusion has been produced by the varieties of the so-called inches in which focal lengths have been expressed." At the International Ophthalmological Congress at Paris in 1867, Zehender proposed to adopt a new system of gradation by which lenses should be known by numbers, the No. 1 to represent a focal length of 240 centimetres, the No. 2 to represent a focal length of 120 centimetres, the No. 48, which is the third of the series, to represent 5 centimetres of focal length. The equivalents of this series, it may be seen, according to the other systems of gradation

now in use, would have to be found by an attempt at reducing the centimetre to some other kind of measure; but this is not all: the metre itself is, according to the commission which recommended and established it as a unit of measurement, approximately the ten-millionth part of the earth's quadrant; then the one-hundredth part of this unit must be an exceedingly indefinite quantity.

I spent the summer of 1878 in Paris. During my stay in that city I devoted considerable time to studying what is called "the metrical system" of weights and measures. I sought, at the dry-goods stores, sticks representing the metre, such as are used in measuring cloth. I bought three tape-lines from three different manufacturers, upon the surface of which were marked metres, centimetres and millimetres. I got three Verniers from different instrument-makers. By actual comparison, the marks on the three Verniers did not correspond. In taking a centimetre of space upon them, there was a total difference of from 1 to $1\frac{1}{2}$ millimetres. The tape-lines varied much more than this, while the metre sticks differed more widely, both in total length and in the fractional marks upon their surface. Just think, then, what confusion must necessarily result from any attempt at determining the refracting powers of a lens by establishing its focal length, imperfect as are the means under the most favorable circumstances for testing.

Now, I am aware that difficulties beset all new ventures which partake of the nature of reform; yet I venture to suggest the propriety of casting aside all former methods of grading lenses, and of adopting an entirely new method which, to my mind, has the advantage of both simplicity and utility. I propose, instead of taking the quadrant of the sphere as a unit of refraction, as the astronomers did in the time of Roger Bacon, who was the real inventor of spectacle lenses, to begin with the lowest perceptible angle of refraction, and calculate by that means alone the refracting power of the whole series, from $5'$ to 90° . For example, I would designate the lens which in the metrical system is called one-fourth diopetre, and which according to the astronomical refraction represents about the $\frac{1}{180}$ part of the quadrant, or a radius of $33' 12''$, by the angle of refraction of $30'$. This, of course, would not be an exact equivalent, but a far more symmetrical proportion inside the maximum angle. I would begin, in fact, with a lens of just one-half that angle, and proceed something after this plan in the regular order of increase of the refracting power, namely: the weakest lens of the series might have a refracting angle of $15'$, the next $30'$, and the next 1° . Now, this lens of 1° of the angle of refraction would correspond almost exactly to $\frac{1}{80}$ part of the quadrant. Its radius would be about $1^\circ 6' 24''$, at least that is the exact radius of the lens in the metrical system marked 0.50

D. Proceeding in this manner, the next lens in the series should represent $1^\circ 20'$ of refracting angle. This corresponds to $\frac{3}{4}$ D., or $\frac{1}{60}$ of the maximum angle of the old system, and represents $1^\circ 39' 36''$ of radius. 1 D. of the metrical system corresponds to $\frac{1}{40}$ of the old unit, which has an angle of radius equal to $2^\circ 15'$. Instead of this, we should have an angle of refraction represented by 2° simply. Proceeding further by the separation of lenses according to the refracting angle of $30'$ until an angle of 6° has been attained, the interval might then vary by 1° until 20° are attained; then 2° should separate the lenses of the series between 20° and 30° ; then 3° from thirty to fifty, and 5° from fifty to ninety. A series of lenses projected upon such a plan would afford the greatest facility for testing the state of refraction in the eye, and would correspond scientifically to Snellen's plan for determining the acuity of vision upon the basis of a visual angle of $5'$.

I present this matter for your serious consideration, in the hope that you will discuss it, if not publicly, at least amongst yourselves. I presented it in a brief manner to the Ophthalmological Section of the Ninth International Medical Congress. I have to-day considered the question from a slightly different standpoint. I shall attempt to give it more practical illustration at Newport next year if I have the good fortune to be able to meet with you.

SARCOMA OF THE SCALP.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, Ohio, May 8-11, 1888.

BY P. S. CONNERS, M.D.,
OF CINCINNATI, OHIO.

Primary sarcoma of the scalp is of such infrequent occurrence that I trust I may be pardoned for reporting to the Section a case recently under my care.

In the latter part of October, 1885, I was consulted by Mrs. S., æt. 25, white, resident of eastern Kentucky, who stated that fifteen years before she discovered on the back of her head a small hard lump of the size of a bean, not painful on pressure. For thirteen years there was no noticeable change in the tumor, but at the end of that time it began to enlarge, and continued to do so steadily until the time of her confinement (five months before I saw her), when the mass was as large as a goose-egg. Since delivery its growth had been very rapid and attended with pain, at times severe. The woman was much emaciated and greatly enfeebled. The tumor occupying the occipital region and looking much like a second head, was somewhat movable from side to side, and upon palpation pseudo-fluctuation was detected. It measured antero-posteriorly 17 inches, laterally 15 inches. Its greatest circumference was 21 inches, and its

least circumference, at the line of junction with the head, was 15 inches. The tumor was removed on the 23d of October, two lateral narrow flaps and a posterior one being made, and the mass readily and quickly separated with the fingers from the pericranium, to which it was nowhere adherent. Hæmorrhage was quite profuse, though from no large vessels, was easily arrested by the application of hot water. The flaps when brought together covered in the entire bared surface, small drainage tubes were brought out at the ends of the base of the now inverted T-shaped wound, iodoform dusted on and a thick layer of absorbent cotton applied. The mass removed weighed almost 5 lbs., and upon examination proved to be a spindle-celled sarcoma. The drainage tubes were removed on the fourth day, and the sutures (silk) on the eighth, when union was found to have taken place. The woman left for her home on the fourteenth day.

For eighteen months (until May, 1887) she continued well, but at the end of that time noticed a small tender spot and soon after a hard lump, which increased slowly for three months and then more rapidly. She was about a month advanced in pregnancy when the recurrence was observed. After her confinement (in the middle of January, of this year) excessively rapid growth took place, and when I saw her, on the 1st of March, the mass measured antero-posteriorly 18 inches, laterally $17\frac{1}{2}$ inches, with a greatest circumference of 25 inches. Its surface was of a bluish color and several large veins ramified upon it. On the 3d of March I removed it, making no effort to save any covering, but cutting along the line of junction with the head. The pericranium was in places included in the diseased mass and was taken away. After the bleeding (less profuse than at the time of the first operation) had been checked, the edges of the wound and the denuded surface were cauterized with the Pacquelin button. The mass after removal weighed $7\frac{1}{2}$ lbs. Dry borated dressings were applied. At the end of the second week erysipelas of the left side of the face, extending up onto the scalp developed itself but ran a mild course. Five weeks after the operation the patient left for her home, the granulating wound being in excellent condition.

The points of special interest in this case are the years—long absence of any change in the original nodule, the marked influence of pregnancy and lactation upon the growth of the tumor, both primarily and in recurrence, and lastly the immense size of the growth. The scalp is not seldom involved in sarcomata affecting the skull, but a primary tumor of such character located in it is exceedingly rare. As when situated elsewhere, in spite of removal and re-removal, the disease may be expected to recur and ultimately destroy life, but operative interference may result favorably, especially if timely. No hard, indolent lump in

the scalp should be permitted to remain, even though for years in an unchanging and unchanged condition. Probably benign and to continue such, it may not be so now or in the future.

MEDICAL PROGRESS.

STERILIZED MILK.—By means of numerous experiments DR. CAILLE has reached the following conclusions: 1. The preparation and administration of sterilized milk can be managed in any well regulated household. 2. The boiling of milk for twenty or thirty minutes under slight pressure, in small bottles hermetically closed, is all that is necessary to practically carry out the principle involved in sterilization; *i. e.*, to destroy the germs of fermentation. 3. The essential material are small bottles with Soxhlet's stoppers, and a tray. 4. Milk boiled in small bottles for twenty minutes and immediately closed by rubber, cork or cotton stoppers will keep sweet, if put on ice for several days. 5. The boiling of milk in the ordinary way is faulty. All milk for infants' and children's use should be boiled in small bottles in a water bath for twenty minutes, when it will keep much longer than if boiled in the ordinary way and the usual length of time. 6. The transportation of milk during the summer months should take place in refrigerator cars. This should be secured by legal enactment. 7. An apparatus for properly boiling and preserving milk for infants' use should be at once introduced into every well regulated household. The essential utensils are: small bottles (5 or 6 oz.) with combination stoppers (Soxhlet's), and a tray of tin or galvanized iron—all procurable for a very moderate sum. A good brush for cleaning the bottles should accompany each set; also a tin dipper, with perforated inner bottom for warming the milk before giving it. Ten spare bottles with a few ordinary nipples would make the outfit complete. To facilitate handling and transportation such an outfit could be packed in a wooden box one foot square and high, and provided with a common handle. All the other utensils, as advised by Soxhlet, are superfluous; the more so as complicated apparatus is difficult to introduce for family use, and is soon discarded. Feeding tubes are difficult to keep clean, and should not be used. The ordinary nipples, for sale everywhere, will fit the bottles and can be turned inside out and thoroughly cleansed. It would be a good plan to stamp into the cover of the boiling pot: *Boil for 20 minutes*, this being important in view of the fact that printed labels are liable to be lost or mislaid.—*Dietetic Gazette*, April, 1888.—*Sacramento Medical Times*, August, 1888.

THE POSOLOGY OF QUININE.—MR. THOMAS

CHRISTY has received a letter from a Ceylon correspondent which throws a strong light upon the above subject. The writer had been trading in the island named, during the wet season, and caught an obstinate ague, which resisted the ordinary treatment with quinine. The patient then went to Newara Eilgie for the sake of change, and, being again attacked, called for the services of the assistant military surgeon of the station. This practitioner laughed at the account of the dosage of the alkaloid tried, and prescribed two half-spoonful doses of the sulphate in sherry, which effected a complete cure. Accounts of other cases are also given, including that of an English lady who suffered from ague and shivering constantly, even in the hottest weather of England. She was quite cured in a week by somewhat smaller doses than the above, and even faced a winter without any fear. Similar quantities of the medicine are recommended in low fever, and when taken in sherry or brandy on waking are stated to produce a delightful and lasting glow in the body, which smaller doses are powerless to effect. No unpleasant after-symptoms have been observed. The writer also calls attention to the circumstance that the same amount of quinine in pill or powder will not bring about the same happy result, and suggests that the differences in the therapeutic action referred to are worthy of more study.—*Gaillard's Medical Journal*, August, 1888.

CREOLIN AS AN INTERNAL MEDICINE.—DR. A. HILLER, Privat Docent in Breslau, publishes some remarks on this subject in the *Deutsche Med. Wochenschr.*, July 5, 1888. The antiseptic properties and comparative innocuousness of creolin, as used externally, have been made known by Fröhner and E. v. Esmarch, and their conclusions are also confirmed by Dr. Hiller. But creolin is of the greatest use in various diseases of the stomach and intestines. Its anti-zymotic influence comes out most clearly when employed against the numerous processes of fermentation and decomposition which accompany most, if not all, such diseases. "Its freedom from poisonous effects, and its perfectly non-irritant effects, make it an ideal antiseptic for the above group of diseases." Dr. Hiller asserts that creolin, given in strong gelatine capsules, in doses of between 3 and 15 grains three times a day, promptly and certainly relieves meteorism from whatever cause, whether constriction, typhlitis, catarrh, atony, or ileotyphus, and hopes thus to prevent perforation in the latter case. It was found equally efficient in simple flatulence, gastric dilatation, acute and chronic gastric catarrh, and diarrhoea. Given in a case of tania and one of oxyuris, its action was prompt and efficient as an anti-parasitic. But creolin appears unfitted for children, owing to their inability to swallow capsules. Creolin may also be used to irrigate the rectum in carcinoma cases; used

thus in solutions of 1 in 500 it acts like a charm in purulent cystitis (Jessner, *ibid.*, 1881).—*British Medical Journal*, July 21, 1888.

GALVANIZATION OF THE THYROID IN EPILEPSY.—In the *Rivista Sperimentale di Freniatria*, vol. xiii, Fasc. iii, Dr. CELSO SIGHICELLI gives details of some cases of epilepsy which he treated by galvanizing the thyroid. He was induced to try this plan by reading Albertoni's description of convulsive attacks observed in dogs whose thyroid glands had been excised. These paroxysms were among the earliest symptoms of the characteristic cachexia following that operation, and bore a close resemblance to genuine epileptic fits. Dr. Sighicelli himself, moreover, had in two cases of mental disease noticed signs which appeared to him to indicate that changes in the thyroid had a direct influence on cerebral nutrition, and might thus cause psychical disturbance. He was, therefore, led to think that epilepsy might in certain cases be dependent on some abnormal condition of the thyroid. Having found electricity useful in hypertrophy of the gland, Dr. Sighicelli thought that it might possibly do some good in rectifying functional disorder. He accordingly applied a constant current of moderate intensity to each lobe of the thyroid alternately, at first for two or three, and afterwards for four or five, minutes at a time. The patients, seven in number, were all of the male sex, and in all of them the disease was of long standing. In three no visible effect whatever was produced; in the remaining four there was at the beginning of the treatment a sudden increase in the number of the attacks, but this was soon followed by a diminution in their frequency. Both the length and the severity of the paroxysms were greatly lessened, and when they did occur they were not accompanied by tonic spasms. There was almost entire disappearance of the phenomena which had previously preceded and followed each fit, and the patients were much improved in mind and disposition. In the two cases in which the success of the treatment was most marked, the amelioration began to show itself about a month after the first application.—*Brit. Med. Journal*, July 28, 1888.

POSTURE IN LABOR.—DR. FRANCISCO ALONSO RUBIO, in a paper read before the recent Spanish Gynecological Congress, laid great stress upon the important part that the posture of the patient plays during labor, both physiological and abnormal. During the first stage he merely keeps the patient from going from one room to another, to avoid catching cold. During the expulsive stage, though he prefers the supine, or at least a horizontal, position as a rule, he changes it to a sitting posture where there is asthma or cardiac weakness, also where the pains have become inert through uterine fatigue. Where there is any

version of the uterus, it is necessary to pay due regard to its direction. Thus, if there is anteversion, the patient should be placed on her back; if there is lateral version, she should lie on the side opposite that to which the fundus uteri is inclined, so as to bring the foetal axis to coincide as nearly as possible with that of the pelvis. It is of course a recognized fact that a change of posture will frequently facilitate the descent of the head even when there is no abnormality either in the position of the child or of the direction of the direction of the uterine axis. When the foetal position is transverse, the patient should be laid on the side opposite to that occupied by the head, with a pillow under the abdomen. The adoption of the genu-pectoral position has frequently been found of service by Dr. Rubio. When there is prolapse of the cord, and it is being dragged upon in a dangerous manner, he raises it above the head and keeps it there during several pains, the woman being placed in the genu-pectoral position. Again, in complicated presentations, he has found this the best posture for their reduction, and in arm and shoulder presentations, where the amniotic liquid has escaped, and the practitioner in attendance has been unable to insert his hand and turn, Dr. Rubio, by the adoption of this position, has found it possible to execute the necessary manœuvre.—*Lancet*, July 28, 1888.

MASSAGE IN INVETERATE ULCER OF THE LEG.—APPENRODT, of Clausthal, in a number of cases that had resisted all ordinary treatment, got successful results from the persistent use of massage. The leg should be carefully cleansed and disinfected before beginning, then light *effleurage* is made below the knee, reaching gradually downwards; only light pressure should be used; the appearance of lymph-exudation about the ulcer is the first sign of its good effects. The best material to employ in massage is lanolin (Jaffé and Darmstaedter), because, owing to its tenacity, it does not irritate, but protects, the skin. After massage, the skin is again well washed with soap and water, and disinfected; the ulcer, and any excoriations, are dressed with lanolin on lint; over this is placed a sheet of silk, and a cambric bandage is applied over all. The addition of disinfecting substances to the lanolin is not necessary, as they usually irritate the skin, and impermeable coverings must be altogether avoided. Under this simple treatment the swelling soon subsides, desquamation ceases on eczematous places, and granulations rapidly spring up on the ulcer itself. It is but rarely advisable to apply zinc oxide and starch to the former, or nitrate of silver to the latter. In spite of the abundant granulations, it takes a long time before the ulcer is healed, owing to the callosity and immobility of the skin, and in suitable cases Reverdin's trans-

plantations may shorten the process. The massage must be continued for a good while after a cure has been effected, in order to restore as far as possible the natural condition, and prevent relapses. The patient should make free use of the limb during the treatment, for it will be found that the pain and tendency to œdema soon cease.

HYPODERMATIC USE OF THE ALKALOIDS.—The Paris correspondent of the *N. Y. Medical Journal* writes: 'The rapidity of the absorption of alkaloids by the subcutaneous tissue is not at all well known, and M. CHOUPPE has been making some interesting studies in regard to this matter. It is of the utmost importance that we should know the exact dose of drugs that we use by hypodermic methods. From the experiments made it is certain that, when the usual doses of the different alkaloids, dissolved in equal amounts of liquid, are injected, they act with quite a difference as to the time it takes to produce an effect on the general circulation. Morphine, for instance takes as much as from six or seven minutes to produce its sedative action, while apomorphine acts in four minutes. Some of these facts are well known, but it is very important that we should know more exactly than we do the precise time it takes to produce the therapeutic effect of all the alkaloids given hypodermically; so that we may not fall into the rather common error of giving fresh doses before the one first given has had time to act.

ANTISEPTIC OINTMENTS FOR VAGINAL TOUCH OR FOR DRESSING EXCORIATIONS, FISSURES, ETC.—DEMELIN recommends the following formulæ:

R—Vaseline	30 parts.
Boric acid finely pulverized	4 "
R—Vaseline	120 parts.
Biniodide of mercury	1 part.
R—Vaseline	30 parts.
Finely powdered iodoform or iodol or salol	4 "
R—Vaseline	30 parts.
Creasote	1 part.
R—Olive oil	100 parts.
Crystallized carbolic acid	10 "

The carbolized oil may be advantageously used in lymphangitis of the breast.—*Revue Générale Clinique et de Thérapeutique*, June 28, 1888.

TREATMENT OF TYPHOID FEVER BY COLD BATHS.—LIEBERMEISTER, of Tübingen, lays down the following propositions: (1) In the majority of fevers the increase of temperature constitutes the danger of the patient; (2) it is the duty of the medical attendant to combat the elevation of the temperature by suitable means; (3) the basis of antipyretic treatment consists in the direct abstraction of caloric by cold baths; (4) there are cases in which antipyretics may be used.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, AUGUST 18, 1888.

THE LANGUAGE OF MEDICINE.

"In medicine," says an author of a recent work,¹ "we may often obtain more practical benefit from the study of some word with an account of the errors involved therein, than from the study of a new theory which rises like a balloon only to burst like a bubble." Dr. Campbell has written what may be called a synopsis of the linguistic history of medicine, which will prove especially valuable to those that have "small Latine and lesse Greek." The claim is made that in studying mathematics or grammar the pupil begins with definitions of the new words to be employed, and that the student of medicine also could save much valuable time by first mastering the meaning of the technical terms by which the principles of the science are to be carried into his mind.

But if it be meant that the student of grammar or medicine must get into his head as soon as possible the meanings of the technical words and terms with which he must come in contact in his study of a language or of medicine, and without applying them as he goes along, we are inclined to think that the student is not wisely advised. The study of definitions of words of a language that he is constantly using is a very different matter from studying definitions of a language that is only beginning to be learned, and it would be a most unprofitable expenditure of time for a

student, before he enters fully upon the study of medicine, to lumber up his memory with the significations of words that are to be applied afterwards. In learning to read a dead or a foreign language the pupil acquires his vocabulary gradually, and as he needs it. He studies to better advantage if he look in the dictionary for each unfamiliar word as it occurs, than if he commit to memory a list of such words before each lesson. At best the commission to memory of a list of words with their meanings is a piece of drudgery, which is scarcely lessened by the knowledge that there will be use for these words in the future. That words must be understood before the thoughts that they convey can be comprehended goes without saying. In the process of learning definitions, however, the student is not walking, but crawling; he must not be expected to assume the erect position and walk before he has mastered the principles of crawling. Assuming that the baby that can only crawl could read, would it hasten his walking to read a work on the mechanics of walking? In laying the foundation of a building the workman does not use his blocks of stone till he is ready for them.

That the history of the language of medicine is valuable for instruction no one can doubt. It has been said that the more languages one knows the more easily are other languages learned; a saying based upon the fact that different languages have much in common. As regards its technical words, medicine, like other sciences, is cosmopolitan. When a new word is coined to express an idea that has not had expression before we do not stop to translate it; we use the original coinage. The translation into English of a new coinage of another language is very like our translations of the metric quantities: it makes so much, with something over. It is better, therefore, to use the word as we find it. And just here the English language has, or seems to have, an advantage over other languages. French, Italian, Spanish, and other writers, the German to a less extent, seem to think it necessary to alter the architecture of all new words that fall into their hands.

Every one must have noticed the difference in the pronunciation of medical words by medical men. This is even true of words derived from the Latin, or of Latin words still unchanged. Medical men are not always supposed to be familiar with modern languages, and the mispro-

¹The Language of Medicine. A Manual giving the Origin, Etymology, Pronunciation, and Meaning of the technical terms found in Medical Literature. By F. R. Campbell, A.M., M.D.

nunciation of these is to a certain extent excusable. We believe there is a sentiment, or an idea, that every medical man must know something of Latin. Dr. Campbell says that the English method of pronouncing Latin should be learned by every student contemplating the study of medicine. "Medical technical terms should be regarded as English words borrowed, for convenience sake, from the classical languages." He claims that the use of the "so-called Continental method" would sound pedantic, affected, and ridiculous; "such familiar words as *vapor*, *ciatrix* and *vagina* would scarcely be recognized if pronounced *wahpor*, *keekahrtreex* and *wahgheenah*." We think not. Even a teacher of the Continental method would be at loss to know what was meant by such unheard of sounds. There are two things to be said in favor of the Continental method of pronouncing Latin: The Germans, the greatest students of the dead languages use this method, and they do not, as Dr. Campbell implies, pronounce Latin according to the sounds of the letters of the German language. In the second place, one might safely offer a handsome prize to anyone that will scan correctly five lines of Latin poetry by any other method of pronunciation than the Continental. The majority of medical terms that are pure Latin words, however, may be regarded as English words in so far as the pronunciation is concerned.

BLOOD STAINS.

Blood stains often play an important part in medico-legal cases. Much of the existing literature upon this subject has outlived its usefulness, and the medico-legal expert or the lawyer that bases his conclusions on such is liable to err. An important contribution to this subject has recently appeared—"Comparative Studies of Mammalian Blood; with special reference to the Microscopical Diagnosis of Blood Stains in Criminal Cases," by DR. HENRY F. FORMAD, of Philadelphia.

Is it human blood? is a question that sometimes involves serious consequences. In determining this question in regard to blood stains, it should be remembered that blood stains are best seen by artificial light. The liquids used for re-moistening and disintegrating dried clots of blood must be of such composition that no harm will be done to the corpuscles. If one wish simply to determine the presence of blood corpuscles, then

water, oil, alcohol, glycerine, etc., may be used. But to preserve or restore the shape of the corpuscle some other liquid must be used, such as Moleschott's, Müller's, Radnew's, etc. Dr. Formad finds that in his hands Müller's fluid (composed of 2 parts of potass. bichromate, 1 part of sodium sulphate, and 100 parts of water) and very strong solutions of caustic potash give the best results. To obtain the largest quantity of unaltered measurable corpuscles from old dried clots and blood stains, it is advantageous to apply moisture and slight heat for several days. His procedure is as follows:

A small granule of the suspected blood or a fibre from the blood-stained fabric is placed on a glass slide in a drop of a 30 to 35 per cent. solution of caustic potash and covered with a cover glass. If the blood-stain was recent, the disintegration of the clot commences at once, and the isolated corpuscles separate and swim swiftly through the liquid if the stage of the microscope is slightly inclined. It is quite interesting to observe how perfectly well-shaped blood discs will tear themselves away from the original formless brown mass. In direct proportion to the age of the stain, from one to within ten days, the softening of the microscopic blood mass and the isolation of the corpuscles is protracted. In dried blood older than ten days the ratio of softening or disintegration cannot be well observed, and a stain of two years old behaved like one of ten days.

The examination can be made under comparatively low amplification, such as 300 to 500 diameters; but when measurements are necessary, then an immersion lens, giving a magnifying power of about 1,000 diameters, better be substituted. Sometimes but a few well-shaped measurable corpuscles are seen, but quite often, in successful preparations from recent blood stains, nine-tenths of the corpuscles in a certain microscopical field will appear quite perfect and fit for measurement.

If the blood specimen is slow in disintegrating and the corpuscles imperfect in appearance, then he adopts the following procedure: The glass cover beneath which the blood fragment is macerating on the reagent is ringed with a little oil, or, still better, with some cement, in order to fasten it and to prevent evaporation, and placed in a moist chamber (a glass vessel, lined with moist paper, and covered). The chamber itself is put

in a water-oven (incubator such as used in bacteria investigation) and subjected to uniform slight heating, not exceeding 100° F., and kept there from one to three days, or as long as is necessary to obtain the desired result, the specimen being examined from time to time. Care must be taken not to overheat the preparation, and to guard against evaporation of contents, *i. e.*, of the liquid between the glass slide and glass cover in which the blood specimen macerates. A number of experiments may be made simultaneously, some of the blood specimens being treated with a strong solution of caustic potash, others by Müller's fluid, the latter often succeeding in very old blood clots to restore shrivelled and to isolate perfect corpuscles when the former fails. While the Müller's fluid with glycerine must be diluted with water in order to obtain the desired specific gravity, a peculiarity in the action of the caustic potash solution must be borne in mind, *viz.*: that the stronger the solution the better its effect, whereas weak solutions of this reagent (caustic potash) destroy the blood corpuscles or reduce them in size by making them spherical. A strong solution (30 to 35 per cent.) gives most beautiful results. The red blood corpuscles have an absolutely natural appearance; retain their perfect color and shape or sometimes resume it, if previously lost, form rouleaux, show the normal biconcavity of the discs, and even show normal diameters on measurement; in short, behave like normal blood. Such is the case where the blood stain was a recent one, and, in fact, the rapid appearance of such good and perfect pictures under the microscope are indications of the recency of the blood stain.

Obviously, however, we cannot draw conclusions and make a diagnosis unless we take into consideration the shape of the corpuscles, the abnormally small and disfigured ones being excluded. "*At least 500 measurements should be made in establishing the average diameter.*" Probably no one that has read the works of the late Dr. J. G. Richardson will question the immense importance of micrometric measurements in all medico-legal cases involving blood stains. Lacour and Masson assert that "one can certify that corpuscles found in the blood under examination are in all points identical with those of man or of the guinea-pig, if they measure more than 1-127 mm." Malinan, of Tiflis, a prominent expert, testified

in court as follows: "If we find corpuscles in blood stains, the diameter of which is 0.0077 mm. or more, then we can conclude that it is in all probability human blood." The consensus of opinion is that the *expert* has the right to express himself quite definitely as regards the probable identity of blood.

The paper of Dr. Formad is a very interesting one, and may be found in the *Journal of Comparative Medicine and Surgery*, July, 1888. It will be of special interest to medico-jurists and to microscopists.

In the *N. Y. Medical Journal* of August 11 Dr. SIMON H. GAGE calls attention to the fact that the red blood corpuscles of lamprey eels are very much like those of man in general appearance. They may be distinguished from those of the human, 1, by the presence of a nucleus, which is made apparent by drying, by acetic acid, and by usual reagents; 2, except in the embryo 9 to 10 mm. long, which would never be used for bait, the corpuscles are nearly twice as large as those of man.

PURE HEAT FROM COAL.

In the past two or three months an article on "The Direct Production of Pure Heat from Coal," taken from an English journal, has been extensively noticed and copied in the newspapers of this country. While there may be some valuable features in the system described, some of the statements are sufficiently extraordinary to deserve comment, if not severe criticism or unbelief. It seems that a Mr. W. A. Gibbs was called upon by some India tea planters to devise a method by which pure hot air, suitable for drying tea, could be obtained from waste wood or coal. The apparatus made by him, and which, it is claimed, fulfils all the requirements, consists of a brick chamber $5 \times 2 \times 2$, built upon the ground, with a feed and a fuel chamber at one end and a powerful fan at the other. Between the chamber and the fan are baffle plates, splitting plates, a standing bridge with perforations at the back, and a hanging bridge with perforations at the front. There are also a number of carefully proportioned inlets to the pipes, for supplying the exact quantity of air required to cause perfect combustion.

It is stated that when the fire was started and

in "good running order," there issued from the fan-mouth a column of hot air 12 inches in diameter, with a uniform temperature of 500° F. "No trace of smoke or discoloration was visible to the eye, nor any odor or taste perceptible." The reporter states that he held his face in this blast of hot air, at 500° F., and that, except for the very high temperature, he felt no inconvenience. It is not stated how long he held his face in the blast. That he could *hold* it there at all.

The most extraordinary thing, however, is the statement that the air drawn directly from the fire was *perfectly pure*. One can readily understand how the air could be kept free from smoke; but how was the carbonic acid removed? The coal being burned in the furnace, the combustion products must have been either carbonic acid or carbonic oxide, or both; and no increased supply of oxygen or nitrogen could have destroyed the carbon that would be present in some form or other in the escaping air.

A *pure* heat, or hot air, direct from coal might be advantageous in many ways, but one cannot accept the statements outlined above until the method is more clearly explained.

CHEMICAL PURIFICATION OF SEWAGE.

DR. A. PFEIFFER has recently contributed an interesting paper relating to the insufficiency of chemical processes for purification of sewage, to a German sanitary paper. In a general way he reviews the different methods that have been adopted for the chemical purification of sewage, and points out the dangers of the irrigation method of sewage disposal. It is now understood that the great danger from sewage water lies in the microorganisms that infest it, and Pfeiffer asks if the modern methods of purification as applied to the waste of towns and cities, have any real effect in clearing the sewage of these microorganisms.

We know, of course, that carbolic acid, bichloride of mercury, and other chemicals kill germs, but we know also that we cannot apply them on any very extensive scale. We cannot make the sewage strongly alkaline nor acid in order to destroy the microorganisms, because the fish in the streams would be destroyed, and the waters rendered useless and injurious. In Pfeiffer's opinion the other chemical methods that precipi-

tate the solid portions of the sewage are of very little avail, since they do not destroy the bacteria, nor remove the dissolved organic matters upon which they feed. He claims that sewage thus treated will in a short time regain all its offensive properties, and that the clarification is but a temporary expedient. He thinks it would be better in the case of rivers of large volume to discharge the raw sewage into the river than to erect extensive chemical works for its chemical treatment.

A STOIC OF SEVEN YEARS.

A remarkable case of concealment of severe injury occurred in Evansville, Ohio, on August 8th, according to the newspapers. It seems that the 7-year old son of Austin Coombs, took a revolver from his father's desk, and while playing with it accidentally discharged it, the ball taking effect in his abdomen. On his mother's return she questioned the boy, who admitted having discharged the revolver, saying nothing of the injury to himself. He having been forbidden to touch the revolver he was chastised by his mother, the boy standing the punishment without a whimper. Shortly afterward he slipped away to a room upstairs and prepared to change his clothes, the ones he wore being clotted with blood from the pistol wound. Toward noon he began to feel sick, and going into a side room lay down upon the floor. Upon being called shortly afterward to get some wood he replied that he could not and that he was sick. His mother going to him noticed for the first time that his clothes were covered with blood. After an examination she surmised the truth, and upon close questioning the boy admitted that he had shot himself. This was not until some three hours after the accident though, and the boy at last reports was steadily sinking.

It is not stated whether any effort was made to perform laparotomy. It seems remarkable that the injury, if seriously involving internal organs, did not cause more immediate and profound shock. That it did not is in favor of the opinion that an operation might have saved the child. At any rate, given a bullet wound of the abdomen, if the hydrogen gas test cannot be applied, the indications are to perform laparotomy.

DR. BRAMANN has been recognized as Privat-docent in surgery in Berlin.

EDITORIAL NOTES.

PELVIC CELLULITIS IN THE MALE.—In a recent number of the *Tidsskrift for Praktisk Medicin* Dr. SKJELDRUP describes a case of pelvic cellulitis in a man 50 years old. The first symptoms in this case were vomiting, flatulence, constipation, abdominal tenderness, and tympanites. There was some pain over the cæcum, and resistance on palpation and dulness on percussion at the same point. Examination *per rectum* showed a tolerably hard tumor situated in the left hypogastrium; it was easily felt by bimanual palpation. An aperient was given, with quinine and iodide of potassium, and wet compresses over the abdomen, for some days. The patient did not improve, the abdominal pain and distension became greater, the difficulty of passing flatus and fæces increased, and the patient was becoming more and more emaciated. An œsophageal tube was passed up to the sigmoid flexure, and a warm enema given, producing a scanty evacuation. The tube was bent by the tumor, which displaced the gut backwards. The enema was repeated two days later, resulting in the copious evacuation of foul-smelling fæces. The patient then began to improve, and after a few more injections fæces were passed naturally. At the end of a month there seemed to be but a slight infiltration anterior to the rectum. The tumor, while it existed, was of an irregular shape, and sometimes appeared to be firm, elastic and tender. In 1885 Dr. Muir, of Selkirk, published a case of pelvic cellulitis in the male.

CAUSE OF MILK SICKNESS.—The following, in an afternoon paper, comes from Vincennes, Ind.: W. T. Ratcliff, of Olney, Ill., has made a wonderful discovery of the plant that causes milk sickness. Some time ago Mr. Ratcliff, who lives eight miles south of Olney, was climbing over a fence and broke a weed, which came in contact with his hand: Mr. Ratcliff had at one time been afflicted with milk sickness. He noticed the broken weed had a peculiar smell, reminding him of his illness. It so impressed him that he resolved to test it. He took from his herd of cattle a young calf and fed the weed to it. The animal soon came down with the milk sickness and died. Mr. Ratcliff was not satisfied, and he fed the weed to two other healthy cattle from his stock, but the result was identically the same.

He took the weed to Olney and placed the matter before a doctor friend, who is now in conference with the Illinois State Board of Health. The discovery has created a good deal of interest, and a thorough test will be made by the State authorities.

SUDDEN DEATH AND ENLARGED THYMUS.—In a recent number of the *Deutsche Medicinische Wochenschrift* P. GRAWITZ, of Greifswald, records two cases of sudden death in infancy, one child being 8 and the other 6 months old. At the autopsies were found the usual signs of death by suffocation, with a very large thymus gland in each case. The question as to whether fatal dyspnoea might not be produced by pressure in such cases is one of considerable medico-legal importance. Virchow has a preparation of an enlarged thymus from a child that died of asthma, and he says: "The thymus was so enlarged that I do not see how anyone can deny that the dyspnoea may have arisen from its pressure."

QUACK DOCTORS' PAMPHLETS.—At the Liverpool City Police Court, on July 23, a man was sent to prison for fourteen days, with hard labor, for distributing in the streets objectionable pamphlets of a firm of quack doctors. Another man was fined 20 shillings and costs, or fourteen days, for posting bills of like character in urinals. Last week a Chicago Police Justice discharged a person arrested for the first offense, the prisoner claiming that he was ignorant of the law.

SCIENTIFIC CONGRESSES IN 1889.—In connection with the Exposition in Paris in 1889 there will be held International Congresses of Hydrology and Climatology, of Hygiene, of Dermatology and Syphilography, of Electricians, of Physiology, and of Therapeutics. The Committees on Organizations have been appointed, and it is probable that the names of the officers will be soon announced.

A NATURAL CUBIC CENTIMETRE MEASURE.—Says an exchange: "Every one has at his disposal a cavity, viz., the external auditory meatus, whose capacity is about a cubic centimetre." It is likely, however, that the use of this cavity for measuring drugs will not become popular.

THE INTERNATIONAL HYGIENIC SOCIETY has opened two kiosks for ladies in London. These will afford writing and reading rooms, and two

large swimming baths, surrounded by recreation grounds. It is proposed to establish fifty similar places in London for ladies (women?), about one hundred in the City for men, and swimming and shower baths in East London.

FRACTURE OF THE SCAPULA WITH LUXATION OF THE HUMERUS is very rare. Dr. Valnot, of Pargues, Aube, records a case, in the *Revue Générale de Clinique et de Thérapeutique*, of July 26, caused by a carriage wheel passing over the scapula.

PRINCE LOUIS FERDINAND, of Bavaria, has passed the State examination of the Empire, conferring upon him the right to practice medicine. He is the second member of his family to enter the profession.

THE RAILWAY COMPANIES OF ENGLAND have taken steps to have their employes examined for color blindness. Arrangements have also been made for examining persons of the mercantile marine.

A NEW JOURNAL, entitled "*La Médecine hypodermique, antiseptie médicale au moyen des injections sus-cutanées*," has appeared in Paris. It is edited by Dr. J. Roussel.

THE DISTOMUM HÆMATOBIUM, according to the *Deutsche Medicinische Wochenschrift*, has caused an epidemic disease among the Italian troops in Massaua.

THE ROYAL COMMISSION ON HIGHER MEDICAL EDUCATION, which has been sitting in England, will, it is thought, issue its report early in October.

THE MICROBE OF EPIDEMIC DYSENTERY, it seems, from a report made by Cornil, has been discovered by his pupils MM. Chantemesse and Vidal.

THE CONGRESS ON TUBERCULOSIS.—At this Congress, which met in Paris in the latter part of July, there were 400 members, about 70 being foreigners.

ISOLATED PAVILIONS FOR INFECTIOUS DISEASES are to be built in connection with the Hospital for Children's Diseases in Paris.

DR. LUDWIG JULIUS BUDGE, Professor of Anatomy and Physiology in the University of Greifswald, has recently died, aged 76.

PROFESSOR HUGO RUHLE, the well-known clinician of Bonn, died on July 11, aged 59.

PROFESSOR FRITSCH has declined to leave Breslau for Würzburg.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, June, 13, 1888.

C. B. NANCREDE, M.D., IN THE CHAIR.

DR. JOHN S. MILLER read the following paper:

A CONTRIBUTION TO THE STUDY OF BONE REPAIR.

The recent observations of Macewen¹ have done much to stimulate the study of bone repair, and have not thrown a little light upon the function of the medullary cells in osteogenesis.

The resort to mechanical irritation of the medullary tissues as a means of accelerating bone repair, is an old procedure. Nancrede² claims a priority in this for America. As far back as 1793, Eve³ relates that the lay surgeons of the frontier were wont to make multiple perforation of the external table of the skull where necrosis had followed the Indian mutilation of scalping. And twenty years ago Agnew² resorted to the same procedure in a case of injury to the head. A fatal termination of the case, however, by encephalic complication, rendered the experiment incomplete. Reports of success by this procedure have been recently multiplied to an extent which will excuse us from repeating them in detail.

That furthermore, medullary proliferation is not only an element in osteogenesis, but is of itself sufficient to that end without periosteal coöperation, is evidenced by the case of Macewen¹, in which a considerable restoration of the humerus was secured "by bone transplantation," after a suppurative inflammation had destroyed both the shaft and its periosteum. The date of this observation is 1878.

The patient was a boy, two years or age. A suppurative periostitis of the right humerus of nine weeks' duration had resulted in total necrosis of the entire diaphysis, and this latter had been removed, leaving a tube of granulation material lining the periosteum. This tube had been kept patent by suitable dressing, until the whole space had become filled with granulation tissue, and had finally become a mass of cicatricial tissue. No bone had grown from this periosteum, except in a small part next the proximal epiphyses,

¹Annals of Surgery, vol. vi, p. 289 et seq., 389 et seq.

²Internat. Encycl. of Surg., by Ashurst, vol. v, p. 8.

³Remarkable Cases of Surgery, p. 35. Philadelphia, 1857.

⁴Loc. cit., p. 301.

where at the outset the periosteum had been found covered with plaques of adherent osseous tissue. In the remainder there had been no osseous deposit, the result being a flail-like arm, which the patient found so useless that the parents desired its removal.

Macewen determined, however, upon another procedure. An incision was made into the upper third of the arm, exposing the head of the bone, to which was found attached a spike-like process of cartilage. This was removed, leaving as remains of the diaphysis a portion of bone $1\frac{3}{4}$ inch in length. From this point a sulcus about 2 inches in length was made in a downward direction between the muscles. The former presence of bone was nowhere indicated, and there was no vestige of periosteum, and the sole guide as to the correct position into which the transplant was placed was an anatomical one. Two wedges of bone were then removed from the tibia of a patient aged 6 years, with anterior curves. The face of the osseous wedges consisted of the anterior portion of the tibia, along with its periosteum, the wedges gradually tapering toward the posterior portion of the tibia.

After removal they were cut into minute fragments with the chisel, quite irrespective of the periosteum. The bulk of the fragments had no periosteum adhering to them, they having been taken from the interior of the bone.

They were then deposited into the muscular sulcus of the boy's arm, and the tissues drawn over them, and carefully adjusted. The wound healed without pus production. Two months after a portion of bone an inch in length and $\frac{3}{4}$ -inch in thickness was found firmly attached to the upper fragment of the humerus.

Two other wedges of bone, larger in size, were similarly dealt with, and inserted two months subsequently to the first graft, and a third couple were placed in position five months after the first. These filled up the gap in the arm to the extent of $4\frac{1}{4}$ inches. The arm then measured 6 inches in length.

Soon the utility of the arm was greatly restored. Seven years afterward he was seen and examined. The shaft of the humerus was found to have increased in length by $1\frac{3}{4}$ inches, being now $7\frac{3}{4}$, and it had increased in circumference to a marked extent, and assumed a somewhat irregular shape. The length of the sound arm had, however, considerably outstripped the length of the transplanted humerus. He could use the arm for many purposes, taking his food, adjusting his clothes, and many games.

Whether the introduction of proliferating medullary cells into ordinary connective tissue granulations can convert the whole into osseous tissue, or that a few osteoblasts will, so to speak, leaven

the whole mass, is a question involving grave doubt, but the affirmative would seem to receive some support from the case which Nancrede⁶ relates in 1883. An extensive laceration had caused denudation and necrosis of the ulna in two-thirds of its extent. The process of repair had been delayed. He drilled numerous holes through the sequestrum into the medullary canal and, to quote his own words, "in a few days granulations sprang up from the ulna and fused with the granulations of the soft parts, and in course of time the fragment was separated."

That the procedure in this case had the effect of stimulating osteogenesis from within we can readily believe; but concerning the fusion with granulation tissue without, a more accurate observation than is recorded by Nancrede is desired. Although by analogy we might conceive it possible, inasmuch as repair within the bone is by ossification of an embryonic tissue derived from the connective tissue around the blood-vessels of the medullary spaces. A similar case is reported by Macewen,⁵ in which granulations appeared upon a surface of bone completely denuded of its periosteum, and gradually spread until they became united with the granulation tissue at the periphery of the wound. Macewen, however, infers from this observation that "the periosteum covering a bone may be completely destroyed or permanently removed, yet the denuded bone may not only retain its vitality, but may throw out cells which will cover it and form a new periosteum."

These cases would seem to confirm Macewen's dictum that the periosteum has no part whatever in the regeneration of bone. But the first case I shall present to your notice this evening demands a different hypothesis for its explanation.

The patient, D. M., aged 14 years, suffered from an osteomyelitis of the right tibia, resulting in total necrosis of its diaphysis. A complete involucrum had formed around the sequestrum and afforded an unsteady support to the body weight. It was covered with the thickened periosteum. A number of fragments had been removed from time to time, and the parents had refused to entertain for him the proposal of amputation. The case, however, when it came into my hands, had become from septic infection so desperate that I was compelled to do something radical at once.

Exposing the shaft, or rather the involucrum, through its whole length, I made with trephine and saw a fenestrum large enough to permit the removal of the remaining sequestra, and cleared out the whole canal. Both epiphyses were found carious upon their exposed surfaces, and were scraped to the limit of safety. In a few days a superficial necrosis took place upon the inner surface of the tube. Demarcation was, however, promptly effected by the free use of aluminum acetate⁷

⁵ Transactions of the Philadelphia Academy of Surgery, 1888.

⁶ Loc. cit., p. 293.

⁷ 1℥. Pot. et alum. sulph., 1 part; plumb. subacet., 5 parts; aque bull., 100 parts. M. Filtra.

—that sheet-anchor in all sloughing wounds—and a fine layer of fine granulations became the field for any osteogenesis which we might hope to witness. During the long process of repair with the carious epiphysis as a never-failing source of bacterial supply, it was no trifling task to keep this extensive opening dry and sterilized. Furthermore, neither the patient, the household nor the neighborhood could endure frequent dressings without great nervous prostration.

The requirements of the case were successfully met by a mixture of iodoform and starch, in proportions which varied with the changing conditions. The cavity of the wound was filled with this dry powder, and to the whole was applied a closed dressing of gutta percha tissue. The purpose of the starch was to absorb the excess of moisture incident to a closed dressing, as well as to dilute the iodoform. As soon as the powder became saturated, it was removed by a stream of sterilized water, and the wound was filled and closed as before. The periods of dressing were gradually increased from three to ten days. I mention these details because, without them, or similar ones, we can wait in vain for the desired repair. In process of time the hollow of the involucrum became completely filled with granulation tissue, which continued to extend until it fused with the granulations from the soft parts and, finally, the whole became covered with a new epithelium, which had gradually spread from the edges of the wound. The tissues now became denser, and offered more and more support to the body weight until, as you see, he has acquired a very useful limb, and can walk without discomfort.

We must, therefore, infer that a metamorphosis into bone has taken place, and as the original diaphysis was gone with its medullary structure, we can find no osteogenic agent in the result other than the periosteum.

We must draw a similar conclusion from the recent case reported by Ceci :

The patient, a young man, developed an acute osteomyelitis of the left scapula five days after circumcision for inflamed phimosis. One month later Ceci⁸ extirpated the bone, making the usual L-flap. The periosteum was left intact as far as possible, and the arm was preserved. The patient recovered rapidly, and there was a subsequent regeneration of the bone.

The only possible explanation of this result is by the hypothesis of periosteal agency or coöperation.

The second case which I present is in confirmation of Macewen's proposition that

"A portion of bone which has its continuity severed on all sides, and has had all its periosteum removed, is capable of living and growing."

This is in contradiction to our inference in the case of the tibia, and can be reconciled only by the assumption that the discovered laws of osteogenesis are of a lower order, subject to some general law of which we are as yet ignorant. But to the case.

Mrs. L., aged forty-seven years, had suffered with a neuralgia of the maxillaris inferior, for the relief of which all medical means had been exhausted in vain, and which, therefore, left to my option only the dernier ressort of neurectomy. The mode of operating was the usual one. The ramus was trephined near the angle of the jaw, the canal was exposed, and about two inches of the nerve trunk were drawn out and excised. The button was, however, returned after having been sterilized in a 1 to 1000 solution of corrosive sublimate, but it was not returned to its old position. With a view of imposing a barrier to the reproduction of the nerve, it was so rotated around its vertical axis that the groove upon its lower surface stood at right angles to the axis of the canal. Not only did the wound close by first intention, but the button grew solidly in its position. Now, the curious thing in the case is, that before trephining I had carefully removed the periosteum, so that the latter can claim no part in the subsequent bone repair. After seven months there has been no return of the disease.

DR. JOHN B. ROBERTS: It is a curious fact that the medical mind has not appreciated the possibility of bone production, despite the frequent instances that must always have come under notice. I was taught in cases of comminuted fracture to take out the spicules of bone that were entirely separated from the larger fragments, lest they should necrose and give rise to trouble. Now it is the practice of the best surgeons to leave the spicules, and we find that often they do not die, and that they assist in the process of union and solidification. This experience is in the same line as the facts given by Dr. Miller in connection with his interesting cases. If these spicules of bone can reunite, why not the button removed by trephining? Why is it not good practice to insert, when necessary, a portion of dog bone or chicken bone? as, indeed, has been done. We must not forget, however, the importance of asepsis, and that it is antiseptic surgery that has made these procedures possible.

In a case such as Dr. Miller reports to-night, where he rotated the button of bone, turning the groove in which the inferior dental nerve had run at right angles to its former direction, I should be inclined to go still further, and turn it upside down. The bottom of the pit in which it is to be placed, and the periosteal surface of the button being scraped, the ungrooved, freshened surface, formerly external, would then be placed inward, and a bony plug would be interposed between the divided ends of the nerve, probably preventing

⁸ Centralbl. f. Chirurgie, Dec. 17, 1887.

the reunion and return of pain which so often occur.

The case of tibial resection has been very interesting to me, as I have recently operated upon a similar one; the patient being, however, a woman of about fifty years, so that I cannot hope for as complete a closure of the cavity in the bone as in this growing child, exhibited by Dr. Miller. In that case I removed the whole front of the tibia, going as near the articular cartilages above and below as I dared. The process of repair is like that we see in a tree. We know that if a foreign body is inserted into a wound made in the trunk of a young tree, the process of cell growth will go on about it, and finally it will be completely covered in, and its presence be unsuspected, until, perhaps, the saw strikes it, as the tree is being converted into lumber.

Dr. Keen, in his recent case of trephining for brain tumor, returned the button of the skull removed, and the patient was able in a few days to walk around with a perfectly healed and reunited cranium. Then we know what the dentists do in the way of transplantation of teeth, or return of teeth to their original sockets after removal of diseased portions. More remarkable still is the implanting of old, dried teeth into new sockets, bored in jaws from which even the alveolar process had disappeared, and their becoming fixed there.

DR. GEORGE E. STUBBS: In reflecting upon these cases, and similar ones, it occurs to me that perhaps in the numerous resections we have done in army and in civil practice, we have made mistakes. Surgery has advanced immensely since the war time, and antiseptic surgery has opened new possibilities. Often in my army practice we removed all the bone when there had been a comminution. I should now, with our new light, try to save more of the broken bone, and so shorten the period of recovery.

In regard to operative treatment of neuralgia, I believe that we are entering upon a stage of work that will be much enlarged in the near future. I had a case recently in which neuralgia of the inferior dental nerve had existed for nearly seven years. I removed one and three-fourths inches of bone with the dental engine, took out as much of the nerve as I had access to, and dressed and treated the wound antiseptically. The wound healed by first intention, and as yet there has been no return of pain; so that I consider I have obtained a very good result.

THE CHAIRMAN, DR. NANCREDE: The first question to be answered in a discussion of this kind is, What constitutes the periosteum? If we mean a fibrous membrane, the inner layer of which consists principally of yellow elastic tissue, then we must agree with Macewen's extreme views, and admit that it has nothing to do with bone repair. But if we study the normal process

of bone development, I, at least, must arrive at a different conclusion. The long bones are laid down in cartilage, a temporary structure. How do they ossify? By means of this very periosteum, which Macewen treats with such contempt, and which Ollier exalted too highly. There is a third layer of the periosteum in direct contact with the bone, and this layer is composed entirely of those elements which, wherever we see them, we recognize as the agents of ossifications—the osteoblasts. The temporary cartilage is invaded by connective tissue, ingrowths from the periosteum, covered with osteoblasts, and is eaten up by them; and we find it permeated, and finally replaced by a network of fibrous tissue covered with osteoblasts. A certain number always remain beneath the periosteum. A certain number, very small, remain in the Haversian canals, a still larger number in the medulla.

It is clear to me why compact tissue dies; it has so few osteogenetic cells. The medullary tissue lives because it is comparatively rich in osteogenetic elements. Why does bone die when the periosteum is stripped off? Because the resulting inflammation is so severe that the inflammatory tissue strangled the osteoblasts in the Haversian canals. With antiseptic means we now control the inflammation, and the osteoblasts are not killed, and the bone is saved.

We are very hard, nowadays, on the periosteum. The fibrous layer has nothing to do with bone repair, but its osteoblastic layer is in direct communication through the lining of the Haversian canals with the medulla; it is practically one structure; and thus, if we look at this matter from the standpoint of a correct histology, we find that both views are correct, provided only that we have a distinct understanding of what is meant by the word periosteum in each case.

As to Dr. Miller's cases, I cannot agree with him as to what formed the bone in the case of total excision of the diaphysis of the tibia. While the shaft was dying, new bone was formed by the deep layer of periosteum, but after that the medullary spaces of the involucrum completed the bone.

I would also take exception to Dr. Robert's proposition to scrape the button of bone and turn it inside out, in the case of trephining the jaw for neuralgia. By this process he would remove all the osteoblastic cells, and the compact tissue would have a very good chance of dying. One reason for failures in operations about the lower jaw, is that it contains so little true medullary tissue, while, on the contrary, we can replace trephine buttons in the skull and have union, because the skull contains a large amount of such tissue.

I think Dr. Stubbs need not blame himself for his practice in resecting in military surgery. The necessary condition to bone repair is that absence of suppuration afforded by antiseptic methods,

and under the conditions present in the operations he speaks of he did right. And, to-day, he does right in trying to save the bone. In each case he takes the proper course in relation to all the circumstances, and that is all anyone can do.

The case of Dr. Agnew, referred to in the paper, occurred some twenty odd years ago. I saw the operation. The wound was completely covered by granulations. The fact that a denuded external table did not always necrose was known to Potts, and to all the older as well as modern surgeons, and had not Ollier led us astray by grafting, by insisting upon the periosteum being the sole osteogenetic agent, ignoring the fact that in removing it a layer of cells identical with those of the medulla are torn off, I think we would have arrived at a correct practice sooner. But surgeons went wrong by authority of Ollier, as they are now going wrong in the other direction by authority of Macewen.

In regard to the implantation of dead teeth, which Dr. Roberts refers to, the principle is probably the same in the bony pegs we used to employ for ununited fractures. They are hollowed out by the granulation tissue which develops into a fibrous or even osseous tissue, and so holds the tooth in place by these newly formed digitations.

About twelve years ago I exhibited to this Society a case in which I resected $4\frac{1}{2}$ inches of the humerus, and about $2\frac{1}{2}$ inches were reproduced from the sawn end. This was without antiseptis. In the case referred to by Dr. Miller, where I drilled the ulna, I am sure that the bone granulations fused with those of the soft parts for these reasons: the shell of bone when detached was not more than one-fourth the thickness drilled through, while the new bone was nearly as thick as the ulna of the other side, as the cicatrix was not materially depressed. A recent experience in a case of knee-joint excision induces me to recommend that instead of wiring fragments of bone we nail them together; after having previously drilled, or not, according to circumstances, allowing the heads of the nails to project through the skin. We thus save trouble and avoid damage in the removal.

DR. ROBERTS: Dr. Nancrede misunderstood me in regard to scraping away the cancellated tissue in reversing the plug in the case of trephining of the lower jaw. I would scrape only what he calls the fibrous periosteum from the button, and from the bottom of the pit in the jaw I would take away the cancellated structure sufficiently to remove all trace of the nerve canal. The two raw surfaces would be placed together, and, by sinking of the button, would be a solid bony plug, interposed between the nerve ends.

DR. MILLER: I do not see any advantage in reversing the plug over rotating it. The groove being at right angles to the course of the nerve, the part in contact with the nerve is still solid bone, and the groove does not matter at all. In

relation to the tibia case, the reason I emphasize the fact that the repair took place from the periosteum, is because there was entire death of the old bone with the involucrum, and the periosteum did not die.

Suffolk District Medical Society.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

Stated Meeting, May 9, 1888.

ALBERT N. BLODGETT, M. D., SECRETARY.

DR. C. P. PENGRA presented

A CASE OF ATHETOSIS.

Athetosis is the name of a disease that was first recognized and named by Dr. W. A. Hammond, of New York, in 1871. It is characterized by an inability to retain the fingers and toes in any position in which they are placed, and by continual motion.

Since his first paper in 1871, there have been thirty-eight cases reported from Europe and eight from the United States; and it is this rarity of its occurrence that has induced me to present this case to this Society, with the hope that it may aid in clearing up the obscurity that surrounds its etiology, pathology, treatment and claims as a definite disease.

In all of his writings Dr. W. A. Hammond claims that athetosis is a distinct disease, and, while admitting its analogy to chorea and cerebro-spinal sclerosis, does maintain that it is independent, and can be so diagnosed. In this he is supported by Greidenberg, in *Urch*, who goes even farther, admitting that it is not necessarily a result of hemiplegia, but may even be idiopathic.

Opposed to this view are Putzel,¹ Sturges,² Leube,³ G. A. Hammond and Birdsall,⁴ and others.

In all cases reported, there has been noted, at some previous period, a history of epilepsy, chorea, hemiplegia, or other cerebral disturbance; while the case of Leube, after having had athetoid movements for four years, actually developed into, and continued as, ordinary severe chorea. The history of the present case is no exception to the rule; and, considering the lesions most often found in post-mortem examinations, it seems that we are forced to believe that athetosis is too intimately allied to chorea, hemichorea, and the like, to merit its claim of being distinct. The lesions found are in the corpus striatum, optic thalamus, or both, and the cortex cerebri, and are the same as occur in the allied troubles. My diagnosis de-

¹ Op. Functions Nervous Diseases.

² Lancet, March 15, 1879.

³ Deutsch. Arch. für Klin. Med., p. 242, 1880.

⁴ New York Academy of Medicine (Neurol.), October 8, 1886.

pend upon the facts, that, in this case, the spasms are limited to the right hand only; that they are uniform, slow and quiet; that the muscles contract or extend together, and are firm and tense; that there is no trembling in any position of the hand or body; that the muscles of the arm are well developed; and that there is no scanning in speech. Hysteria is eliminated by the age at which it began and by the present condition of the patient.

Mrs. Anna B. Grover, age twenty-two, born in Marshalltown, Pa. Her family history is very good, excepting slight rheumatic attacks in the father's later life, and paralysis agitans in one aunt.

Her own health has been exceptionally good, with the following exceptions received from her father:—

"Anna was healthy, and perfect as could be until about two and one-half years of age, when a servant girl caught her by the arm, and tried to pull her up stairs. A physician was called, and pronounced it a bad sprain. After the usual bandaging and carrying in a sling for two weeks, it seemed as well as ever. About three months afterwards, having eaten heartily of green Lima beans, pods, etc., in the garden, she was taken at night with violent spasms, purging and vomiting, followed by great prostration, emaciation, unconsciousness, and paralysis of said arm, and also of speech, that continued for three months. During the sickness she was almost continually in motion, even after getting up. Her voice was entirely gone, and the arm now affected was useless. Many different doctors and treatments were employed. The voice gradually returned, and the arm improved. At first the hand was strongly contracted and painful. The arm was carried behind her back, through shame, till about the thirteenth year, which produced a lateral curvature, for which a brace was worn eighteen months. All improvement has been from the shoulder towards the hand. Electricity seems to have done the most good."

Present Condition.—Her general health is of the best, since the foregoing. "The hand," as she calls it, is not at all painful: there is no movement at night, or unless her attention is called to it, or she is excited. A decided effort of the will has only the slightest effect upon its movements. At times it contracts powerfully enough to tear a glove: to open it, she must use her left hand, and forcibly extend the fingers to their utmost. When left alone, the contracted fingers will return to normal in from two to five minutes.

In most of the reported cases the movements have been most marked in the thumb and little finger. In her case the thumb and first finger are most affected. The first finger is often forcibly extended, while the others are as strongly contracted. The hand is of little use, as there is no

telling when it will take hold or let go. At present she is under no treatment, and is impressed that it is slowly improving.

In all cases the most improvement has been from electricity; and, contrary to theory, the faradic current has proved the more useful. No cure has been reported; and, while the trouble is regarded as incurable, it has never been known to prove fatal.

DR. J. J. PUTNAM asked: Are the reflexes of the lower extremity altered?

DR. PENGRA: Not at all. There seems to have been no trouble with any part of the body except the arm and the vocal organs. The lima beans were regarded as a poison by her parents, but from her history she undoubtedly had an attack of gastro-enteritis.

DR. PUTNAM: Are the muscles of the right arm hypertrophied?

DR. PENGRA: There is no enlargement that I know. The muscles seem stronger. They are set and tense.

DR. HAMILTON OSGOOD: What is the condition of the hand in the night?

DR. PENGRA: Quiet. She has never had a contraction in the night. There was a time, a considerable time ago, when she had slight contractions, I believe, but at no time has she had contractions since she has known anything about it.

DR. PUTNAM: I would like to say only a few words about the case; it is an interesting one. I suppose that it is very difficult, almost impossible, to draw any sharp dividing line between these disorders of movement. Dr. Gowers wrote, so far as I know, the most satisfactory paper on the subject a few years ago, and showed how one could trace gradual degrees of difference in these cases through the whole scales from the typical athetosis to even, he thought, as far as the late rigidity of hemiplegia; but without going so far as that, it seems very certain that there is only a sliding scale between the typical cases of athetosis and what has been known under the name of post-hemiplegic chorea; the difference consisting partly in the character of the movements, and partly in the fact of the greater or less amount of paralysis associated with them.

I was rather surprised to hear the Doctor say that so few cases have been reported, for I should not say that it is very rare to find cases that are as typical as this case. I would not speak of this as an absolutely typical case, because, as a rule, the movements would not stop in the typical cases when the patient was holding the arm at rest with the hand supported with the other hand, as at present; and then the movements are usually much more varied in character, involving extension quite as much as flexion, so that the fingers are thrown about in a worm-like action all the time, while here the flexion predominates, and

the flexor spasm is much more marked, I should say, than in typical cases of this disease. However, I do not see how it can come in any other category than that of one of the involuntary disorder of motion of that type.

DR. PENGRA: In regard to the number of cases I referred merely to the number of cases recorded. I have no doubt that there are plenty of cases, as we are quite aware, in most any line of disease, that, while not being recorded, have existed. We must realize that only in 1871 the disease was recognized as such. From the literature that I can read—of course my experience has not been sufficient to warrant my statement—but from what I can read I am inclined to think that athetosis is an organic disease. I think I so stated in my paper. The disease I do not think I stated as a typical one, from the peculiarity of the motion.

The definition that Hammond gives is "a disease characterized by an inability to control the fingers or toes, and a continual motion." And in his reports of the cases, and he is the father of the disease, you might say, as far as the diagnosis is concerned—in the reports of his own cases there has been such a marked remission that almost the first thing that I thought of in connection with the definition was the superfluousness of the word "continual." During the greater part of the time that my patient was suffering from the trouble, and the paralysis, which seemed to have been the precursor of the disease, she was in constant motion, that included a large portion of the body, I believe mostly on the right side, but the paralysis was limited to the right arm. The motions of the arm did include movements toward the back to such an extent that she finally put it on the back and left it there.

I do not think I referred to the case as being exactly typical; so far as I can see there is no typical athetosis.

My statement suggested as strongly as I could state from my knowledge of the cases, that it is an organic cerebral disease. The statement of Driedenberg (?) is the one statement that counteracts all others so far as it goes, to the effect that it may be idiopathic, but his own case does not sustain that, inasmuch as one of his cases were preceded by hydrocephalus and another case by epilepsy; and as to the matter of the word "continued," it is certainly not right, because there have been no cases recorded where remissions have not occurred.

DR. C. F. FOLSOM: It seems to me, Mr. Chairman, that it is a very interesting case, and that we want to understand in regard to a good many points what we cannot make out to-night before calling it clearly a case of athetosis. If it is athetosis it differs in a great many essential respects from what is called typical athetosis. It is a question, of course, how far these movements of

this sort can be considered as belonging to that group, and due to organic trouble. There doesn't seem to me any marked hypertrophy of the hand, and the movements seem very different from the movements of athetosis; the flexor muscles contract almost instantly, as soon as the resistance is taken away. It is quite possible that there may be a little difference in the knee-jerks. The whole group of cases is certainly a very interesting one. I suppose that nobody is satisfied in his own mind just what to call athetosis, and what not, but the fact of the hand being quiet during sleep, and perfectly quiet so long in the position that the patient has it now, seems to me to make it very unlike what is described as athetosis.

DR. PENGRA: Would the Doctor suggest some name for it?

DR. FOLSOM: As I say, I would not wish to express an opinion without having it under observation some time. It reminds me of a case that was in Dr. George B. Shattuck's ward in the City Hospital, which suggested athetosis. Strangely enough a case of real athetosis was in the ward at the same time. The former had these features of being quiescent during sleep with no hypertrophy of the muscles, and the contractions of the muscles were sudden and violent and quick, instead of slow and gradual, and there was the feature of quietude for a long time. It was finally thought to be a functional trouble, and in the course of time, by rest, and cod-liver oil and tonic treatment, it almost entirely disappeared. It seems to me it is a difficult matter, sometimes, to make a diagnosis between the various forms of anomalous chorea and hysteria and athetosis.

DR. PENGRA: I would say that according to the best authorities that I can find on the subject of diagnosis—that is, in print—this is the essential feature, which I quote from Dreidenburg, "that there is no trembling in any position of the hand or body; that the muscles of the arm are well developed, and there is no scanning in speech; that the movements are uniform and slow and quiet; that the muscles contract and extend together, and are firm and tense."

DR. FOLSOM: He evidently has in mind, I think, disseminated sclerosis, in his diagnosis; in regard to the scanning of speech, etc.

DR. PENGRA: I don't pretend to be an authority on the subject at all. I brought it before the Society to hear some opinions beside my own. Experience, of course, would be a teacher that a young man could not get from books. In regard to the treatment of the true athetosis, there was one writer, in fact this same Dreidenburg, who stretched the median nerve, but he finally had one case where he stretched the nerve and the nerve remained stretched, and as in no previous case he got any result that lasted more than eight days, he finally gave that up, and resorted to electricity entirely.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Surgical Aid in the Treatment of Pulmonary Disease—Surgery in Laryngeal Phthisis—Surgery in Pneumonia; in Pulmonary Abscess; in Tubercular Cavities; in Pulmonary Tuberculosis.

The discussion on *Surgical Aid in the Treatment of Pulmonary Disease* at the June meeting of the Fifth District Branch of the New York State Medical Association was opened by a suggestive paper from Dr. N. L. North, consulting surgeon to the Methodist Episcopal Hospital of Brooklyn. At the outset he said that he was aware that comparatively few clinical facts could be produced upon which to base an argument, and such a discussion must, of necessity, be somewhat speculative. It was as yet a matter only in contemplation, though perhaps an event to come, for the surgeon to have the temerity to amputate a tuberculous larynx, or to make a door in the chest cavity and, having rid a lung of its tuberculous or diseased portion, obtain by careful antiseptic or aseptic dressing union of the remaining parts, and subsequently transfer the patient to the physician for medical upbuilding and convalescence. It was a fact, however, that notwithstanding the better knowledge of the pathological conditions and hygienic needs in diseases of the lungs, the treatment pursued was altogether unsettled and unsatisfactory, and without marked results. Phthisis attacked its multitudes now, as in the ages past, and multitudes succumbed to it in spite of medicine, hygiene, change of climate, and a largely increasing list of new remedies; and even the acute affections of the organs of the chest proved fatal at the present time in nearly, if not quite, as large a percentage as formerly. At this juncture, with the thought of what surgery—modern, antiseptic surgery—has accomplished in other parts of the body in alleviating and curing diseases and injuries heretofore thought to be fatal, and only fatal, in their tendencies and results, it seemed reasonable to turn our attention to the subject of surgical aid in chest diseases.

The first affection considered was pneumonia, and in this he expressed the opinion that it would be wise in many cases to return to the old minor operation of phlebotomy. "In the first, or congestive stage," he asked, "when the lung is literally blocked up and the right side of the heart filled to overflowing with blood, is it not more rational to abstract the blood by venesection, if need be, or even by direct aspiration from the right ventricle, and so relieve the obstructed lung and the engorged heart, than to attempt to force the organs to accomplish an impossibility by the stimulating plan so common in what is now called the

supporting treatment? The fear of producing prostration by prompt radical treatment, as well in this disease as in some others, sometimes promotes, through improper attempts at stimulation, the very engorgement and consequent prostration it is desired to avoid."

It is perhaps worthy of note that quite a number of the speakers who took part in the subsequent discussion also spoke with favor of a return to the practice of venesection in many cases in the first stage of pneumonia.

Again, in pneumonia, he went on to say, the patient having passed the dangerous point of engorgement, and the changes of the second and third stages tending to resolution having failed to occur, so that a condition of suppuration and breaking down of the lung, or perhaps gangrene, has supervened, it would seem eminently proper that surgery should be called in to assist in the treatment, and an attempt, at least, be made to arrest the almost certain progress of the disease to a fatal termination. To make an opening through the chest wall with the view of draining the pus cavities or boldly removing, if need be, the diseased or gangrenous portions of the lung itself, would, with proper precautions, antiseptic and otherwise, appear possible, and to afford a reasonable prospect of good results. Chronic abscess, he continued, had already been relieved by surgical procedure, and the question remaining for decision in regard to this was how best to supply the relief, whether by resection of one or more ribs and a large, free opening, or by a valvular outlet. It had occurred to him that with a device containing a ball-valve the passage of fluid might be made comparatively free, while the passage of air inwards could be practically prevented.

Laryngeal phthisis offered to the surgeon opportunities for testing the resources of his art with fair hope of favorable results, since operative procedures for the arrest and, in some cases, apparently permanent cure of epitheliomatous, carcinomatous, and other malignant diseases of the larynx had already been reported. The probabilities would encourage a resort to either partial or entire laryngectomy, and especially in view of the fact that laryngeal tuberculosis not infrequently proceeded almost to its fatal termination without the lungs having been invaded by the disease.

Having made some general remarks to the effect that surgical wounds of the lungs and pleuræ were less dangerous than was generally supposed, Dr. North made the somewhat startling suggestion of completely removing the apex of a tuberculous lung at an early period, before the disease had spread to other portions of the lung or involved the opposite lung or other organs. This idea, he said, was one which had occupied his mind considerably of late, and was in line with the recent practice of removing tuberculous glands, joints,

etc. The details of an operation to reach and remove a lung apex would be slightly different in the two sides on account of the difference in the origin and course of the right and left subclavian artery. Such an operation would be almost identical in its general features with that for ligating the subclavian, except that after the vessel was reached it, with the accompanying rim and veins, would be lifted back with a blunt hook. After the application of suitable clamps, to prevent hæmorrhage or the egress or ingress of air, would follow the ablation, with the knife or scissors, of the diseased portion of the lung. The lung and pleural wound would then be closed with the continuous catgut suture, and the whole allowed to drop back into the chest cavity; after which, with the utmost care as to drainage, etc., the external incision would be closed. Very possibly in some cases the clavicle would have to be sawn in two and turned back; while in others the first rib might have to be excised in order to secure sufficient room for reaching and manipulating the lung apex. Perhaps in other cases, again, a posterior operation, involving the exsection of the first and second ribs posteriorly and the pushing aside and downward of the scapula, might prove the most feasible method. In either case the object of the radical procedure referred to would be the cure of the disease, or the prevention of general tuberculosis by an early removal of the nidus of the tubercle bacilli.

In concluding Dr. North propounded a number of questions which were taken up *seriatim* by Dr. Joseph D. Bryant, who read the next paper.

(1.) *Can surgery be made available in the treatment of pneumonia or other acute affections of the lungs, and if so, how?* The foundation of rational medicine and surgery, Dr. Bryant said, rested on the detection and removal of the causes of disease. Hence, before inquiring what surgery can do for the relief of these conditions, it seemed proper to inquire first how surgical skill could prevent them. The exact nature of acute pneumonia, whether it were a local disease or a local ramification of a constitutional disease, was not as yet determined. Surgery could not, therefore, exercise a rational preventive influence against this disease; nor could he comprehend how operative surgery could exercise a practical influence in relieving a patient from the full effects of an attack of it. As to traumatic pneumonia, he did not feel that he could add anything to what had already been published in the various standard works on surgery.

(2.) *Can surgery assist in the treatment of abscess of the lung; and what is the safest and most effectual mode of reaching, evacuating and draining the abscess?* In abscess of the lung surgery could and did afford efficient assistance, and Hippocrates himself had laid down the surgical principles of treatment in a clear and satisfactory manner. The greater part of Dr. Bryant's paper was taken up

with an admirable description of the methods now in vogue among the best surgeons for the diagnosis and treatment of this class of affections, and at its conclusion he stated that Professor Roswell Parker, of Chicago, had reported 40 cases in which pneumotomy was performed for the relief of bronchiectatic and tuberculous abscess, with the following results: 23 bronchiectatic abscesses, with 9 deaths; 13 tuberculous abscesses, with 6 deaths. In 32 cases of hydatid cyst treated in a similar manner there were 4 deaths.

(3.) *What surgical process, if any, can help in the treatment of laryngeal phthisis?* In an advanced stage of the disease obstructed breathing and expectoration not infrequently occurred; and he said he had in mind a case of this kind at Bellevue Hospital which Professor Janeway transferred to his care for relief from these symptoms by tracheotomy. The operation not only relieved the patient of obstructed breathing, but also at once afforded a free escape through the tube of purulent matter from the lungs. In this case the upper extremity of the trachea was nearly occluded by ulcerating granular growths, and it appeared that he would have rendered the patient a more complete and lasting service than was possible by tracheotomy by splitting the larynx in the median line anteriorly and removing the diseased contents. A step of this kind could not, however, be taken consistently except the prognosis were bad in all respects. The surgical measures that were now employed in other conditions of phthisical larynx belonged more properly to the domain of specialists in laryngology.

(4.) *Can surgery be made effectual in draining tubercular cavities, and how?* Such cavities could be opened in a manner similar to that described for abscess of the lung, and the precautions enjoined in the latter instance should be sedulously observed. It was undoubtedly true that the disinfection and drainage of tubercular cavities would in many instances cause a marked alleviation of the symptoms; but it was hardly to be expected that a cure of the local tuberculous condition could be effected, since the specific growths are too far disseminated from the abscess wall, and often made up such a large proportion of its structure that little, if any, direct curative influence could be exerted. A tuberculous ulcer of the integument—one that could be treated directly and with vigor—exhibited a degree of perverseness to the effect of both medical and surgical measures that portended ill for the successful treatment of a similar disease of the pulmonary tissue.

(5.) *Is it possible by surgical process to reach and destroy, by antiseptics, germicides, or otherwise, the bacillus tuberculosis, or whatever is the cause of phthisis pulmonalis?* This question, he said, had already been answered under the fourth. The injection into pulmonary tissue and pulmonary cavities of substances destructive of the tubercle

bacillus could be indulged in if one felt inclined to make the attempt; but to consider it possible to cure in any appreciable degree the tuberculous condition itself by any such measure, seemed to require a large increase of faith, with a corresponding loss of judgment. He did not think it proven to the satisfaction of competent physicians that the injection of antiseptic fluids into tubercular lung cavities has been productive of practical good; while the dangers attendant on the general acceptance of such a measure would undoubtedly constitute a great evil.

Dr. Avery Segur, of Brooklyn, referred to the results obtained in cases of bronchiectasis by Dr. Theodore Williams and Mr. R. J. Goodlee, of London, and quoted the conclusions arrived at by the latter in regard to the surgery of the lungs. He also stated that Dr. Williams had for a considerable time been employing antiseptic injections at the Brompton Hospital for consumptives, and that the results obtained by him, as well as other observers, both in England and this country, had been such as to encourage further trial of the method in suitable cases. The injection of pulmonary cavities was found to be perfectly possible, and attended with great amelioration of the symptoms in many instances.

Dr. Bailey, of Brooklyn, spoke of the benefit which he had seen derived from such injections in five old hospital cases of phthisis; there being diminution of the cough, expectoration and night-sweats. Half a drachm of a five per cent. solution of carbolic acid in glycerine was injected every day, or every second day, and the procedure was entirely painless.

Dr. C. S. Wood, of New York, gave a *résumé* of the results obtained by Goodlee, Runeburg, and other investigators in this field, and having referred to the plan proposed by N. Riva, an Italian surgeon, for treating tuberculosis by injecting antiseptic fluids into the pleural cavity and completely flooding the diseased lung, stated that in summing up the observations and reports thus far made we might safely draw the following conclusions: In abscess of the lung, whether gangrenous or not, it is advisable to first aspirate the cavity, and then inject, at the same time and through the same puncture, an antiseptic fluid. If the abscess refills the operation must be repeated. When a foreign body is supposed to be lodged in a bronchus an opening should be made into the lung by the resection of a portion of one or more ribs, under strictly antiseptic precautions, and the foreign body removed. That the latter operation was attended with but little danger Dr. Wood said was abundantly demonstrated by the results of many similar operations during the late war. But with our present knowledge there was but little encouragement in any surgical operations upon the lungs for phthisis; and the reason why surgery was so impotent in this field was not

difficult of comprehension. Tubercles were not confined to any one portion of the lung, although the aggregation was usually greater at the apex than elsewhere; and before a cavity requiring surgical treatment had been formed, other portions of the lung, as well as other organs, were usually involved.

Drs. Leale, Truax, Barnes, McCullom and Squibb also took part in the discussion, and in bringing it to a close Dr. North spoke of the probable local character of tubercular disease in the early stage, just as in the case of cancer. He thought that we need not feel discouraged because the reports of the surgical procedures referred to were not as yet very favorable. If there was any hope of success whatever, we must still persevere, as the alternative was death. The phthisical patient should not be abandoned to the surgeon; but the surgeon and physician should unite together in the treatment. P. B. P.

BOOK REVIEWS.

A MANUAL OF DISEASES OF THE NERVOUS SYSTEM. By W. R. GOWERS, M.D., L.R.C.P., etc. American Edition issued under the supervision of the author, and containing all the material of the two-volume English edition with some additions and revisions, with 341 illustrations. 8vo, pp. 1,357. Philadelphia: P. Blakiston, Son & Co. 1888. Chicago: W. T. Keener.

Dr. Gowers' numerous contributions to medical literature and his former smaller works upon the diagnosis of diseases of the nervous system, have made him well known to the profession as a clear and exact as well as an interesting writer. From the present volume we expected much and have been in no way disappointed. It is probably the most comprehensive manual upon the subject in our language. Each topic is discussed with well-proportioned fullness. The descriptions are clear and accurate and not at all diffuse.

The author says in his preface that the object of the work is "to afford the student the means of gaining an adequate conception of our present knowledge of the diseases of the nervous system, and to supply the practitioner with the information he needs for dealing with these diseases in his daily work." The book will accomplish these objects better than any other at our hand. The clearness of Dr. Gowers' descriptions of symptoms of diagnostic value is particularly commendable.

A reader is surprised, however, at the rare references that are made to authors and experimenters. While this is disadvantageous to those who make nervous diseases a specialty and are endeavoring

oring to cover the whole literature of the subject in their reading, it tends rather to gratify the student and fix definitely ideas in his mind by teaching him *ex cathedra*.

The illustrations are numerous and for the most part very satisfactory. A few that are evidently made directly from photographs of patients are artistically poor, and some of them do not make clearly evident the object to be illustrated. It is to be hoped that in future editions these cuts will be replaced by better ones.

The first sixty pages are devoted to general symptomatology. In the next sixty pages diseases of the nerves are described. Following this subject 325 pages are devoted to diseases of the spinal cord. The next 500 pages are allotted to diseases of the brain, and the remainder of the work to general and functional diseases.

MISCELLANEOUS.

AMERICAN ORTHOPEDIC ASSOCIATION.—*Preliminary Programme of the Meeting to be held in Washington, September 18th, 19th and 20th, 1888.*

1. Newton M. Shaffer, New York, "The Modern Treatment of Chronic Joint and Spinal Disease."
2. V. P. Gibney, New York, "Immobilization in Articular Disease." Report on the Treatment of Club-foot by means of the Thomas wrench, or the "T. T."
3. Henry L. Taylor, New York, "Mechanical Treatment of Senile Coxitis."
4. A. B. Judson, New York, "A Practical Point in the Treatment of Potts' Disease of the Spine."
5. C. F. Stillman, New York, "An Efficient and Inexpensive Method for the Mechanical Treatment of Potts' Disease."
6. John Ridlon, New York, "Rest, in the Treatment of Chronic Joint Diseases."
7. Dillon Brown, New York, "Acute Epiphysitis in Infants."
8. Samuel Ketch, New York, "Remarks on Lateral Curvature and its Early Treatment."
9. DeForrest Willard, Philadelphia, "Osteotomy for Anterior Tibial Curves."
10. T. G. Morton, Philadelphia, "Description of an Apparatus for Measuring any Inequality in the Lower Extremity."
11. Benj. Lee, Philadelphia, "Hæmatoma Oris, as a Sign of Injury to the Spine in the Superior Cervical Region."
12. A. J. Steele, St. Louis, Mo., "Two Knee-joint Excisions."
13. H. Hogden, St. Louis, Mo., "Report on Morton's Operation for the Immediate Reduction of Club-foot."
14. Ap. Morgan Vance, Louisville, Ky., "Femoral Osteotomy."
15. Geo. W. Ryan, Cincinnati, Ohio, "A Case of Reflex (?) Valgus."
16. W. R. Whitehead, Denver, Colo., "Remarks on the Operative and Mechanical Treatment of some Joint Diseases and Injuries; with especial reference to the Hip, Knee and Elbow Joints, with Illustrative Cases."
17. E. H. Bradford, Boston, Mass., "Analysis of Treatment of Seventy Cases of Club-foot."

LEWIS HALL SAYRE, Sec'y.

285 Fifth Avenue, New York.

SIMPLE TESTS FOR POISONOUS CANDIES.—The *American Analyst*, of March 15, 1888, writes that to test candy with respect to poisonous colors one needs a few ounces

of alcohol, about an ounce of bleaching powder in solution (hypochloride of calcium), a little white woollen yarn, and a small bottle of aqua ammonia. See first whether the color can be dissolved out by alcohol; if it can, immerse the woollen yarn in the solution, and should the color adhere to the yarn and dye it, the probabilities are that it is a coal-tar color; if a red, it may contain arsenic. If the alcohol produces no effect, apply a drop of the bleaching powder solution to the surface of the sweetmeat; if the color fades out it is probably of vegetable origin and harmless.

"The poisonous color most frequently used is chrome yellow, a compound of chromium and lead. Its presence may be strongly suspected if the following tests have shown that none of the harmless yellows have been employed. The harmless yellows most commonly employed are turmeric, a vegetable color made from the root of a certain herb, fluorescein, a coal-tar yellow, and a number of vegetable yellows. Turmeric turns red when treated with ammonia. The other vegetable yellows fade when treated with the solution of bleaching powder. To detect fluorescein dissolve the candy in a tumbler of water and view the water in the sunlight against a black background. If fluorescein has been used, the green fluorescein will then be seen. When the tumbler is held between the eye and the light the color of the water appears yellow. If no results are obtained by any of these tests the suspected candy is probably colored by chrome yellow and is poisonous. Burnt umber, an iron-bearing earth frequently used to adulterate chocolate confections, may be detected in this way: Dissolve the confection in a glass of hot water; if a brown gritty residue remains undissolved on the bottom the presence of the umber is indicated."

WATER FOR LIVERPOOL.—Note is made of a stupendous plan for supplying the city of Liverpool with water, says the *Sanitary News*. It involves the removal of a whole Welsh village, including woods, cottages, churches, etc., this immense space to be devoted to a reservoir four and one-half miles long by half a mile to a mile broad, and eighty feet deep. There are to be three lines of pipe, each sixty-eight miles long, with filtering beds and secondary reservoirs; and the cost of the aqueduct alone is estimated at \$15,000,000.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from August 11, 1888, to August 17, 1888.

Major J. N. Lauderdale, Surgeon U. S. A., July 28, promoted to Surgeon U. S. Army, with rank of Major, to rank from July 3, 1888.

Asst. Surgeon Joseph K. Corson, U. S. Army, leave of absence extended one month. Par. 17, S. O. 178, A. G. O., August 2, 1888.

Asst. Surgeon James C. Merrill, U. S. Army, granted one month's leave of absence from August 3. Par. 7, S. O. 178, A. G. O., August 2, 1888.

Asst. Surgeon John de B. W. Gardiner, U. S. Army, will on the expiration of his present sick leave of absence report in person to the commanding officer at Ft. Leavenworth, Kan., for duty. Par. 4, S. O. 178, A. G. O., August 2, 1888.

First Lieut. Charles F. Mason, Asst. Surgeon U. S. A., re-appointed July 28, 1888, to rank from July 2, 1888. Re-reported for duty at Ft. Washakie, Wyo., August 2, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 11, 1888.

P. A. Surgeon H. W. Whitaker, detached from the "Mohican" and wait orders.

INFORMATION WANTED.

A correspondent wishes to get a work giving the treatment of genito-urinary diseases by electricity.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, AUGUST 25, 1888.

No. 8.

AN ADDRESS

ON

THE PRINCIPLES OF PRACTICE INVOLVED IN THE EXTIRPATION OF THE UTERINE APPENDAGES WHEN NOT THE SEAT OF TUMOR.

Delivered by invitation before the Medical and Surgical Society of Western Illinois, at Jerseyville, Ill., August 1, 1888.

BY CHARLES A. L. REED, M.D.,

OF CINCINNATI.

PROFESSOR OF SURGICAL DISEASES OF WOMEN IN THE CINCINNATI COLLEGE OF MEDICINE AND SURGERY, AND OF CLINICAL GYNECOLOGY AT THE WOMAN'S MEDICAL COLLEGE OF CINCINNATI.

MR. PRESIDENT AND GENTLEMEN:—In accepting your kind invitation to address you—an honor for which I am profoundly thankful—I find myself embarrassed at once by a wealth of topics and by a poverty of ability. I take it, however, that I will come nearer engaging your attention and fulfilling your expectations by discussing some subject connected with the department of practice with which I am identified. But even within that limitation I have left me a multitude of themes; for the progressive spirit of gynecology and abdominal surgery has brought to the surface many perplexing problems of importance alike to the specialist and to the general practitioner. I may be pardoned for the reflection that in many of these questions, involving considerations of operative procedure, and in which the success of the operation depends upon its timely performance, the burden of responsibility rests with the general practitioner. It is he who first sees the case; it is he who should first recognize, or at least suspect, its pathology; and it is he who should first at least suggest the necessary treatment. The future success of abdominal surgery, in its broader extensions, in this country, depends upon the recognition and adoption of this rule by physicians who are the first to attend these cases.

The improved statistics in ovariectomy now being furnished by the leading American operators is due chiefly to this phase of progress by the general profession. A distinguished English ovariectomist was once showing me a case of small and easily movable ovarian cyst. "That," said he, "is the way we get our patients since we edu-

cated the profession up to early operations and no tappings." In this regard our own profession is nearly as far advanced as the British. In the last five years I have not operated upon a single case of ovarian tumor that had been previously tapped, and the majority of my cases have been advised to have the operation done early. This is because our profession has grasped the principles upon which success in ovariectomy depends; and it is safe to say that it will act with similar promptness and wisdom in advising laparotomy for other conditions just so soon as the expediency of the operation and the principles upon which it is based are demonstrated with equal conclusiveness. I find myself, therefore, readily prompted to discuss to-day, in a very brief way, a no less important theme than the principles of practice involved in the extirpation of the uterine appendages when not the seat of tumor. I am not unmindful that I may be venturing in where angels might fear to tread. In abdominal surgery the accepted truth of to-day bids fair to become the demonstrated error of to-morrow. This was recently demonstrated by my distinguished friend, Grieg Smith, who found it necessary to practically rewrite his already classical work on abdominal surgery within six months after it had been out of print, so great had been the progress in so short a time. You will therefore pardon me if, at the outset, I declare that I do not to-day commit myself to any final conclusions on the questions which I may discuss.

At the outset let me emphasize a few preliminary points. The uterine appendages—ovaries, parovarium and tubes—are in no sense vital organs. Their presence is not essential to either the life or the physical well-being of a woman. Indeed, her whole sexual apparatus appears to be tucked away in one corner of her body so as to be of the least inconvenience after having fulfilled the temporary purposes for which it was created. But even in this remote position, and whether in a state of functional activity or not, these organs sustain certain relations which make them objects of at least pathological importance; and hence it is well enough to bear these relations in mind. The proximity of the appendages to the remaining pelvic viscera and to the intestines is of less importance than the blood and nerve supply. It

is therefore well enough to remember that the appendages get their blood from the ovarian arteries and from a few anastomosing branches of the uterine; that they get rid of their blood chiefly through the Pampiniform plexus; and finally, that both arteries and veins are situated low down in the posterior fold of the broad ligaments. The significance of this arrangement is peculiar, viz.: that, while displacement of these organs disturbs, their removal does not destroy, the circulation. It is also well enough to remember that the nerve supply comes from the hypogastric plexuses of the sympathetic system, and that these plexuses, in turn, are supplied with communicating branches to the lumbar and sacral ganglia and to the sacral nerves. The significance of this arrangement is that, although primarily supplied by sympathetic filaments, yet, by virtue of secondary connections with the spinal system, the appendages become central telegraphic stations whence impressions, pleasurable or painful, healthy or unhealthy, are transmitted to the remotest nook and cranny of the system. It should be remembered, too, that the function of the ovary cannot be exercised if the matrix of that organ be so hardened that the maturing follicle cannot approach the surface, nor when the white tunic becomes so toughened from disease that the egg, having reached the surface, cannot escape. And it should be remembered, finally, that the Fallopian tubes, to be of any account at all as egg-carriers, must be open at both ends. It is in these facts that extirpation of the appendages finds its chief justification, but we can spend a few minutes in further considering

TAIT'S OPERATION.

About 1868 Sir James Y. Simpson was treating all cases of retro-uterine displacement by reposition and pessaries, and he was treating all cases of retro-uterine tumefaction in which the mass could not be demonstrated as distinct from the uterus as cases of uterine displacement. The results were not satisfactory, particularly to a young assistant, who once ventured the suggestion that the retro-uterine mass might be a distended Fallopian tube (which had just been discussed in France), and that it might be removable. The idea was frowned upon by the autocrat of the Royal Infirmary. In a short time the young man sought a new field of labor south of the Tweed, and carried his idea with him. On February 11, 1872, at Birmingham, Mr. Lawson Tait—for Simpson's assistant was no other than he—successfully opened a woman's abdomen and removed her uterine appendages. This was the beginning of the operation of extirpation of the uterine appendages for inflammatory disease, and the beginning of an intelligent pathology of what Sir Spencer Wells calls "these out of the way organs." The successive revelations of pathology

which have ensued upon this bold and daring step are of vast importance. We now know that so soon as the Fallopian tube becomes inflamed its fimbriæ curl inward and become sealed by plastic lymph; that the ordinary mucous secretion, finding no adequate vent through the normally narrow uterine orifice of the tube, accumulates; that if the exudation be intense or of gonorrhœal origin it becomes purulent; that if less intense and non-specific it remains merely mucous; that if it occur at or about the moliminal period it may be sanguineous; and finally, that if in consequence of progressive suppuration there is spontaneous discharge of the contents into the uterus the collapsed walls, now denuded of their epithelium, may become adherent. In this way we have (a) pyosalpinx, (b) hydrosalpinx, (c), hæmatosalpinx, and (d) desquamative endosalpingitis with adhesions.

And just here permit me to call attention to a point which I deem of great importance, and that is that the one condition common to all these various forms of disease is occlusion. I know no better way to emphasize this fact than by calling your attention to the specimens which I herewith exhibit to you, and which I took at random from my collection. They are the tubes and ovaries which I removed from a young lady who had been under every form of conservative treatment for over two years. You will observe that the tubes are tightly closed and that they are distended by pus. The plastic exudation around the fimbriated extremities is extensive and well organized and, as you observe, has fairly soldered each tube to its respective ovary. You conclude at once that, first, an ovule could not get into the tubes; next, that if it could get in it would be killed by the highly acid purulent contents; and finally, that if it could get in and could survive the pus, it could not get out. It is evident that tubes in such a fix can subserve no other than pathological purposes; that, indeed, in a functional sense they are dead, and dead, too, beyond the hope or possibility of resurrection.

The latter declaration may be, indeed has been challenged. While in Philadelphia a few years ago, Professor Parvin told me that during his residence in Indianapolis he had heard of a doctor living somewhere in Indiana who thought he had an idea that he could run a sound through the womb into the tubes, drain away their contents and thus cure them. We both laughed at the vagary, and so far as I was concerned the mad proposition was forgotten until I encountered it again in the *Medical Register* some time last winter. It was from the pen of a Kansas City man that time; but I have heard nothing from him since I showed him the error of his way. In the *British Medical Journal* for April 21 of this year, I was surprised to find Dr. More Madden, of Dublin, commit himself to the same fallacy, quoting

this very Indiana method of treatment as something new with himself. It was heralded as his discovery. Now, the discovery of gravitation by Newton was an accident; the discovery of the expansive power of steam by Watt was an accident; and hence it was eminently proper that Madden's discovery also should have its birth in an accident. We learn, therefore, that while exploring the uterus he was surprised "to find the sound pass in up to the handle, and on palpation to discover that it had obviously entered the right Fallopian tube." The isolated circumstance was forthwith elaborated into a new tenet of conservative (?) surgery—as practiced by Madden. Now, as a matter of history, even my Indiana neighbor was anticipated in his idea by Tyler Smith, who may be pardoned for having entertained the thought when we consider the defective knowledge of pathology and surgery in his day; but even he redeemed himself by repudiating his wild fancy. It is difficult to treat the matter seriously in this day of advanced intelligence.

The objections to the proposed practice are simply insuperable. In the first place, none can tell whether he has pus or something else within the tube; while, in the next, no refinement of manual dexterity will enable one to determine whether he is putting the sound into the tube or through its attenuated walls into the peritoneum. The danger is obvious. But should the tube be successfully drained in this way, it is of no account anyhow, for the distal extremity remains closed. Here we pause. We must wait until some mechanism is devised with which to disentangle the fimbriæ. We turn with confidence to the ingenuity of Madden. We shall have no surprise when we see him emerging from his seclusion with some beautiful device—combining, may be, the principles of the glove stretcher and the knitting machine.

BATTEY'S OPERATION.

On the 17th day of August, 1872, Dr. Robert Battey, of Rome, Ga., successfully extirpated the normal ovaries from a woman for the arrest of the menstrual function. The case, which was reported in the *Atlanta Med. and Surg. Journal* for September, 1872, was the first recorded one for extirpation of any part of the uterine appendages for any purpose whatever. The technique of the operator was similar to that which had formerly been practiced by Thomas for the removal of small ovarian tumors through the vagina, and which he had described under the head of "vaginal ovariectomy." Battey's idea was to "arrest diseased and pernicious ovulation and to effect the change of life." It was based upon the then accepted but now fairly exploded doctrine that menstruation is necessarily dependent upon ovulation; hence the ovaries alone were removed. The operation as practiced by Battey several years after its

inauguration, consisted in opening the vagina through the cul-de-sac; the ovaries were dragged down by the fingers, separated by *écrasement*; no ligature was applied, no drainage-tube was inserted, and the wound was left open. Blood clots which subsequently formed were raked out by the finger, and when suppuration began, as it frequently did, the peritoneum was washed out by means of a gum catheter. Three to five assistants were required, the time was generally an hour or more, and the mortality was 20 per cent. This operation is, fortunately, a thing of the past, a chapter of history. The procedure which now goes by the name of "Battey's operation" is, strictly speaking, nothing more or less than an abdominal section for the removal of the healthy ovaries alone, undertaken for the purpose of precipitating the menopause.

There are three reasons why this operation is now but seldom done, viz.: first, the removal of the ovaries alone is no guarantee of the cessation of menstruation; second, the tubes, even when healthy, can be of no value and are only potential for mischief when left behind; and third, the tubes can be removed with the ovaries without complicating the operation. The fact remains, however, that the ovaries, whether diseased or not, may be removed under certain conditions and the healthy tubes left behind, a mere question of remote possibilities alone being involved. The field, however, is limited.

The operation may be done with propriety in cases of rudimentary uterus, giving rise to distressing menstruation—circumstances which first induced Battey to do the operation. I have on hand a case of extrophy of the bladder and congenital absence of the vagina; menstruation has occurred from the rectum. I can detect ovaries by rectal examination. I shall remove the ovaries and of course the tubes, too, if I can find them, as soon as cool weather arrives. There are cases of obscure pelvic pain which depend upon chronic ovaritis. In these cases we may have interstitial induration or peripheral exudation with adhesions. The matured Graafian follicles, being unable to burst, undergo cystic degeneration. Either of these three conditions is the source of exquisite pain, constant, but aggravated at the menstrual period, and interfering to an important degree with the general health. Often these diseased organs become the nidus of more active inflammatory trouble which in turn may result in abscess. One of my fatal cases presented precisely this state of affairs. It came to me from Dr. Cook, now of the Oxford Retreat. The ovary was adherent to the pelvic wall, and just beneath the organ a small abscess had developed, which was diagnosed before operation, but which had already become the source of septic mischief before I put the knife to the case. An earlier operation would have saved her, but fortunately neither

Dr. Cook nor myself were responsible for the delay.

Irreducible displacement of the ovary, the organ enlarged and hyperæsthetic, lying in the cul-de-sac and acting as the cause of dyspareunia and general ill-health, is another legitimate indication for the removal of at least the diseased ovary. I have done the operation in several cases, all of them successful not only as to recovery from the operation, but as to ultimate results.

[Dr. Reed here exhibited a number of specimens from his cases illustrative of the pathological conditions to which he had alluded.]

THE "SPAYER" AND THE "NEURO-GYNEATRIST."

There are certain other cases for which removal of the ovaries alone is practiced and which I would really prefer not to discuss, but candor impels me to the task. When Battey christened his operation he called it "normal ovariectomy," thus implying that it was intended for the removal of healthy ovaries; and Goodell made bad matters worse by speaking of the removal of the appendages as "spaying,"—an absurd misnomer. At any rate, the idea of removing healthy ovaries for the relief of pain led others to remove them for other nervous phenomena; there presently grew up a serious abuse of the original idea of Battey, and doctors were to be found all over the country who were, in very fact, "spaying" women for the relief of hysteria, epilepsy, hystero-epilepsy and allied nervous disorders. The recording angel alone knows the mortality. Conservative gynecologists on this side of the Atlantic called a halt. The Birmingham school planted itself firmly upon the proposition that none but manifestly diseased appendages should be removed. This edict has been accepted. We now remove the appendages—ovaries or tubes as may be—in those cases only when, on exploratory incision, we find them the seat of gross disease, and we resort to exploratory incision only when the symptoms point strongly to an ovarian or tubal origin of the disease.

But those of us, of the more conservative turn of mind, who feel that we have been somewhat instrumental in establishing these limitations to the practice, and who feel that we have thus delivered the unfortunate neurotic from the hands of the wanton "spayer," are not yet relieved of our solicitude. We see the fair object of our concern drifting into other and more terrible snares. Our friends, the alienists and neurologists, inform us that women's diseases, "their antecedents and sequences, have a peculiar fascination for the neurologist." The wily nerve doctor, to put himself in line for these cases, proposes to transform himself into a "neuro-gyneatrist." This specialist, *sui generis*, has only been christened and has not yet become a potent factor in womb affairs. Preparations for activity have only gone to the extent of arranging an artistic vocabulary. From the specimens at hand one could easily fancy that

the victim of an obscure pelvic pain, on consulting the "neuro-gyneatrist," would be informed that as a matter of fact she had a "visceral neurosis," which, although a "gyneasic disease," was yet one which existed chiefly in its "neural and psycho-neural factors;" or, to be more explicit, she has "inherent neuropathic degeneracy," the combined result of "ancestral nerve overstrain" and "acquired neuropathic decadence;" that as a final result there exists "nerve apathies" and "sequent neurasthenia," associated with more or less "afferent nerve insensibility" and "central motor atonicity;" and that, manifestly, she is in need of a treatment which will excite the "contractile tonicity of transmitted peripheral excitation over the vaso-motor neural mechanism of the pelvic viscera." Then the poor woman, after she recovers from her faint, naturally seeks shelter in the private sanatorium of that next product of progressive evolution in specialism—the Psycho-Neuro-Gyneatrist!

EXTIRPATION OF APPENDAGES VS. APOSTOLI'S TREATMENT FOR MYOMA.

But while we decry "spaying," and laugh at the "neuro-gyneatrist," there are circumstances under which the removal of the normal appendages for their influence upon at least a part of the nervous system, is found to be a most beneficial expedient. I allude to cases of uterine myoma. There has grown up a strange misconception of the way this operation effects a cessation of the hæmorrhage and a reduction of the size of the tumor in these cases. The prevalent impression is that the circulation is cut off. A moment's reference to the anatomical *résumé* given at the beginning of this address will show that the ovarian arteries are not touched in this operation, nor are any of the important vessels lying deep in the folds of the broad ligament. The interception of the vaso-motor nerve supply is the more plausible explanation. But whatever may be the *rationale* of the operation the fact remains that as an alternative to hysterectomy it has proven a life-saving measure. Thus, in the Spark Hill Hospital from 1879 to 1886 inclusive, the removal of both ovaries and tubes was practiced in 91 cases of myoma with 87 recoveries; while during the time, in the same institution and by the same operators, 42 hysterectomies yielded but 25 recoveries. But notwithstanding this excellent exhibit, ablation of the appendages in these cases promises to be superseded by the Apostoli treatment. I myself have passed through three epidemics of electricity. Another one is now upon us. I acknowledge that I am affected with a mild form of the disease. The potter's-clay electrode is a feature of my equipment. I am free to admit that I have seen myomata grow smaller and hæmorrhage cease

¹C. H. Hughes, M.D. "Neural and Psycho-Neural Factor in Gyneasic Disease." Alienist and Neurologist, April, 1888.

under its use; and in other cases I have seen it fail completely. I, however, feel encouraged, and my conservative instincts lead me to hope for the ultimate success of the treatment, providing, of course, that the ascertained results shall show it to be safer as to primary mortality, and equally satisfactory as to ultimate results. But this exhibit has not yet been made; and until it is it may be well for us not to abandon the old for the new.

REMOVAL OF APPENDAGES IN PUERPERAL PERITONITIS.

A more recent extension of this department of surgery has come about through a knowledge of the condition of the appendages in puerperal and purulent peritonitis. I have not yet had the opportunity of doing this operation, although I proposed it in a case of abortion at two months. It was on the third day and the temperature was 104° , with extreme tenderness and some tympanites low down in the belly. The attending physician was not convinced of "the new pathology," as he termed it, and for lack of his cordial support the operation was declined by the patient and her friends. The case died three days later. I herewith present to you the uterus and appendages, which were removed at the autopsy. You will observe that the tube on one side presents a typical pyosalpinx of long standing, and that its walls are extremely dark and obviously gangrenous. There is here, near the occluded distal extremity, a slight perforation which bears evidence of having been an ante-mortem condition. Now, what relation did this perforation bear to the purulent peritonitis which proved fatal in this case? The tube on the other side is also occluded, but from the recent lymph about the fimbriæ and from the character of the contents, the probabilities are that occlusion took place only after the inception of the inflammation following the abortion. If, now, the gangrenous appendages had been removed and the peritoneum washed out and drained, there would have been a strong probability of recovery. I have recent private advices that Professor Tait has lately had eight consecutive recoveries under this line of treatment. Dr. Thos. Savage recently presented to the British Gynecological Society (*British Gyn. Jour.*, April, 1888), appendages which he had removed from a case of puerperal peritonitis. The ovaries were found enlarged and black; the intestines matted together by recent lymph, and the abdominal cavity contained a pint or more of non-offensive purulent fluid. "Medical men," he said, "were becoming alive to the necessity of calling upon specialists to operate, but they experienced difficulty in deciding when and at what period they would be justified in doing so." He then advised that all lying-in cases having feverish symptoms should be operated upon so soon as fluid could be detected in the abdomen; and I accept this as the

principle which, for the present, must guide us in undertaking this class of cases.

REMOVAL OF APPENDAGES FOR INTRAPERITONEAL HÆMATOCELE.

The splendid pioneer work of Dr. Francis Imlach, of Liverpool, in establishing the relation of extraperitoneal hæmatocele to ruptured tubal pregnancy, has made us familiar with another set of conditions under which extirpation is practiced. He found rupture of the tube to be the underlying condition in the majority of all cases of intraperitoneal accumulation of blood, and he removed the appendages for the purpose of controlling the bleeding point. He reported sixteen successful cases two years ago. I had the pleasure of reporting my first successful case to the Ohio State Medical Society in 1887, and I have since had two more cases, both successful. The operation is simplicity itself. Open the belly; scoop out the blood clots; wash out the peritoneum, and remove the appendages on the affected side. As compared with the let alone treatment operative interference presents a small mortality—only two deaths in sixty cases which I have collected. If we are to judge of an operation by its results we may fairly state that this one has earned a place in surgery; and if we are to consider the pathological necessity for an operation we may say that in this instance it is simply imperative.

THE "UNSEXING" OF WOMEN.

There is a phase of this discussion which must not be omitted. It is made important by the recent utterances of gentlemen no less prominent than Dr. More Madden to the effect that extirpation of the appendages for conditions such as I have been describing unsexes a woman and deprives her of the power of propagation; and I am apprehensive that the delusion is entertained by other very respectable members of the profession who have not looked into the matter. I feel that from what I have already said, and from the specimens which I have already exhibited, you are convinced of the absurdity of the idea. As a matter of fact the operation could not deprive a woman of her fecundity, for the very good reason that the incurable disease with which she is afflicted has already deprived her of that function, and there is no possibility of its restoration. But I presume reference is had to the notion that following the removal of the ovaries there is a decadence of the sexual appetite. In the first place this is a mistake, and has been denounced as such by every operator of importance, including both Battey and Tait, who have pointed out that the removal of painful organs from the pelvis is promotive rather than destructive of sexual feeling. But grant that it were true. Is a woman to go through life racked with pain that she may satisfy the lust of a man? The proposition is too repul-

sive to be discussed in decent society, yet this is logically just what Madden is teaching. There are others, doubtless, who are prompted to advise against operation for the reason that the conservative line of treatment is vastly more remunerative to the practitioner; but I don't know that this view helps matters much, for it amounts only to a choice between pruriency and venality.

EXPLORATORY INCISION.

It were idle to say that diagnosis of these "out of the way" organs is easy. As a rule, it cannot be made at a single examination, but has to be arrived at after a study of the case embracing numerous examinations and covering a considerable period of time. Often the diagnosis cannot be carried beyond the point of presumption without an exploratory incision. Here is another point on which the profession has gone into error. Mr. Tait inaugurated exploratory incisions for the purpose of confirming presumptive diagnosis, and announced the definite limitations under which he did the operation; but the profession at once exclaimed, "Tait says when you don't know what is the matter with a woman cut her belly open and see," and many of them did so. Now, Mr. Tait never said anything of the sort; but he did say "that in every case of disease in the abdomen or pelvis, in which the health is destroyed or life threatened, and in which the condition is not evidently due to malignant disease, an exploration of the cavity should be made." In this Mr. Tait shows a spirit, not of recklessness, but of marked conservatism. I have, for instance, successfully removed a 30-lb. sarcomatous tumor of the ovary in a case in which the symptoms of malignancy were evident; and the records of Spark Hill furnish another instance. The time has gone by when hands must be kept off all malignant cases. The law might therefore be changed to read: "when the condition is not evidently due to manifestly *irremovable* malignant disease."

CONCLUSIONS.

In conclusion, then, let us answer the inquiry, When should the general practitioner advise extirpation of the uterine appendages?

1. In cases in which, after adequate investigation, he is assured that there is intra-tubal accumulation.

2. In cases in which, from congenital deficiency of some of the organs, there can be no healthy exercise of the menstrual function.

3. In cases of chronic ovaritis, giving rise to intolerable pain, and in which cure has been demonstrated as impracticable by conservative means.

4. In cases of irreducible displacement of the ovaries giving rise to severe pain.

5. In cases of large uterine myoma giving rise to dangerous hæmorrhage, and in which the elec-

trical treatment has failed after a reasonable trial, and finally, in which extirpation of the appendages can be practiced with greater safety than hysterectomy.

6. In cases of puerperal peritonitis and intraperitoneal accumulations in which, after opening the abdomen, the appendages are found diseased.

7. In cases of intraperitoneal hæmatocele in which, on exploration, a bleeding point is found in a ruptured tube.

8. Exploratory incision should be advised in all cases in which any of the foregoing conditions are reasonably suspected, and in all cases "of disease of the abdomen or pelvis in which the health is destroyed or life threatened, or in which the condition is not evidently due to" irremovable "malignant disease."

ORIGINAL ARTICLES.

OXYGEN ENEMATA AS A REMEDY IN CERTAIN DISEASES OF THE LIVER AND INTESTINAL TRACT.

Read in the Section on Practical Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY J. H. KELLOGG, M.D.,

SUPERINTENDENT OF THE MEDICAL AND SURGICAL SANITARIUM AT BATTLE CREEK, MICH.

The importance of the rôle played by oxygen in the human system has no parallel among the other substances required for the healthy maintenance of the body and its functions. A man may live a month without food, a week without water, but dies in a few minutes when deprived of oxygen. Oxygen is the vitalizing agent of animal and vegetable life. It aids both in building up and in tearing down those complex molecular compounds which characterize all living forms. The intensity of the life which an animal lives, is in exact proportion to the amount of oxygen which it breathes. The sluggish life of the frog is the natural result of its imperfect breathing apparatus, just as the astonishing activity of the humming bird is rendered possible by the perfection of the respiratory system.

The reception into the body of an increased amount of oxygen means an increased amount of vital work. Tissue building, and tissue disintegration are only possible by the aid of oxygen. Glandular activity, either secretory or excretory, is equally dependent upon a supply of oxygen. The process of digestion, the most essential element of which is gland action, is hence very clearly dependent upon the supply of oxygen. That this is not merely a theoretical conclusion, or a deduction of physiological chemistry, is evidenced by the prodigious digestive powers of the woodman and the mountaineer, and the correspond-

ingly feeble digestive ability of the persons of sluggish or sedentary habits. The chronic dyspeptic who resists the therapeutic influence of pepsins and pancreatins, peptones, and all sorts of artificial peptogens, and the most carefully prepared medicinal prescriptions, sometimes runs away from the polypharmacy of his physicians and spends a few weeks in the woods, in the mountains, at the seashore, anywhere out-of-doors, pays no attention to diet, eschews digested foods and liver stimulants, and in a month comes home with a clean tongue, and stomach intact, chiefly because he has been taking into his system daily an extra supply of oxygen. The clearing out of organic rubbish from the nooks and corners of the system, the better heart action, the quickened vital activities of the whole body, have enabled his digestive glands to make a better quality and larger quantity of digestive fluids. By this means, the septic condition of his alimentary canal has been overcome. The abnormal activity of microbic ferments has been restrained, and the toxic influence of the ptomaines and other poisons developed by their action has been prevented. The albumen and gluten and other nitrogenous elements of the food, instead of being converted by fermentations into unusable and obnoxious compounds, to be eliminated by the kidneys and other emunctories, are now made into normal peptones, good blood, and finally organized into nerve and muscle, giving strength and vigor in place of the old feebleness and enervation. The starch, sugar, and fats, instead of being converted into alcohol, carbonic, acetic, and butyric, acids, and thus worse than wasted, are now supplied to the blood in such form that the body is provided with ample supplies of heat and force, and has a surplus to store away, thus making a gain in flesh. It would be unfair to claim that oxygen is the only factor in the production of this change, but certainly it is the most potent one.

The wonderful vitalizing and invigorating influence of oxygen is unequalled by any other agent in nature. I have seen a patient suffering with double pneumonia, with purple lips, livid cheeks, glazed eyes, a fluttering, almost uncountable, pulse, breathing shallow and at the rate of fifty a minute, suffering great distress, and apparently just at death's door—I have seen such a patient revived in a most marvellous manner, by the inhalation of pure oxygen. The normal color returned to the cheeks and lips. The eyes brightened, the pulse became stronger and slower, the respiration fuller and less frequent, and the patient fell into a quiet slumber, awakening only when the oxygen was withdrawn. The subtle influence of oxygen, when condensed and made active by its combination with the red corpuscles, is something which we may not fully understand, but we must admit the facts of experience, and of

physiological science which attest the marvellous energy of this simple substance in stimulating and supporting the vital activities of the body.

I have made use of oxygen by inhalation for a number of years in various conditions, having been led to do so by what I learned of its use and apparent results while pursuing medical studies in Paris. I have seen some good results from its use in this manner, especially in pneumonia, and emphysema. The great objections which I have found to its use in this manner have been these:

1. The difficulty of making the blood take up, through the pulmonary mucous membrane, much more oxygen when breathing pure oxygen than when breathing ordinary air. The air contains about one-fifth its bulk of oxygen. Of this, not more than one-fourth is ordinarily removed during respiration. There being such a surplus of oxygen in the air, the addition of any amount, even to the extent of providing the lungs with pure oxygen, does not very greatly increase the amount taken up by the blood, except in cases such as pneumonia and emphysema, in which the amount of air received into the lungs is abnormally small, and the amount of carbon dioxide in the blood abnormally large.

2. The great expense involved in administering the remedy, if used in such quantities as to be of any material value. It could hardly be expected that a few breaths of pure oxygen once or twice a day would accomplish any very great therapeutic results. This would be very much like adding to the rations of an under-fed man two or three kernels of corn, when he was already receiving a hundred times as much several times a day. I have estimated that to increase the amount of oxygen actually received into the blood in twenty-four hours, so small an amount as one per cent. would require the respiration of about twenty-two cubic feet of oxygen gas, the actual cost to make which would be not less than two dollars, and if purchased, the cost would be fully three times as great.

3. A third objection to the use of oxygen by inhalation for the treatment of disorders of the stomach, intestines, and liver, is the fact that so very minute a proportion of the small amount of oxygen received ever reaches the diseased parts, they receiving only their proportionate share of the total amount taken in by the lungs, so that really very little benefit could be expected to accrue to these organs by the use of oxygen in the ordinary method. When making some experiments with sulphuretted hydrogen by the method of Bergeon, the idea occurred to me that oxygen might be used in the same way, and I at once saw the great advantage of using oxygen in this manner for diseases of the digestive organs, and especially the liver, since oxygen taken into the intestines would be absorbed by the portal

vein, thus going direct to the liver, instead of being distributed to the whole body.

I had at this time under my charge a most obstinate case of lithiasis. The patient had had for a long time a very abundant deposit of uric acid and urates. A non-nitrogenous diet, copious water drinking, and a variety of remedies, had apparently no influence upon this symptom. The patient was losing flesh and strength, and was scarcely able to be about. Skin muddy, sclerotics dingy, tongue foul, constant headache, and a brassy taste in the mouth. I was deterred from attempting to employ the gas by enema for some weeks after the idea occurred to me, by the reports of pain occasioned in the use of sulphuretted hydrogen enema by the admixture of air. I determined to make the attempt, however, and on June 20, 1887, by my request, one of my assistants, administered to the patient two litres of pure oxygen gas. The treatment was repeated daily for about four weeks. After the first three days, both the uric acid and the urates wholly disappeared from the urine, and did not again reappear while the patient was under treatment except on two occasions, when treatment was omitted for a day or two, soon after the beginning of the treatment, and then in only very slight amount. The brassy taste disappeared from the mouth, tongue became clean, the eyes and skin clear, the headaches ceased, the patient gained several pounds in weight. All these improvements in symptoms appeared within a few days after beginning the oxygen enemata.

That oxygen may be taken up by the intestinal mucous membrane, or that an interchange of oxygen and carbon di-oxide may take place through this membrane, might be inferred from well-known facts in comparative physiology. For example, in certain fishes the mucous lining of the alimentary canal performs a very important part of the work of the respiratory system. Some members of the gar family are killed almost as quickly by cutting off the supply of oxygen to the alimentary canal as by interrupting the gill respiration. Great numbers of illustrations might be given from the lower classes of the animal kingdom, in which the entire process of respiration is carried on by the mucous lining of the alimentary canal. Why, then, should not man also be able to receive a very appreciable and efficient amount of oxygen through this channel?

But I am able to present something more than theoretical considerations for believing that the oxygen administered in this manner is absorbed. I have frequently asked patients to whom the gas has been administered to observe carefully respecting the possible escape of the gas as flatus or in eructations, and have often been assured that no such escape occurs, although usually there is an escape of flatus within two to four hours after the treatment is administered, often

soon after unless the patient is instructed to restrain the tendency to the escape of gas. I am collecting specimens of gas at different intervals after administration, for the purpose of determining the length of time it must be retained to enable complete absorption or interchange to take place.

To make assurance doubly sure, I made the following experiment upon a guinea pig on July 20, 1887:—

After placing the animal under chloroform, the abdomen was opened, and the intestines drawn out and spread out in such a way that the dark portal veins were in full view. A quantity of gas was then injected into the rectum, and to my great satisfaction I found that the dark venous blood assumed a bright red hue almost equal to that of arterial blood within less than one minute after the injection of the gas, showing the rapidity with which the absorption of the oxygen takes place. To confirm the result, I allowed the oxygen to escape from the bowels, afterward replacing it, and repeating the experiment several times. In each instance the color of the blood in the mesenteric veins assumed its ordinary dark purple color immediately after the oxygen was withdrawn, while the bright color returned almost instantly when the new supply of oxygen was introduced.

The processes of digestion and excretion are chiefly those of oxidation and hydration, considered from a chemical standpoint. Dujardin-Beaumetz has shown that the use of oxygenated water materially aids digestion. By introducing pure oxygen gas directly into the intestinal canal, digestion may be materially aided, especially in cases in which the intestinal portion of the digestive apparatus is the part chiefly at fault.

It seems to me to be entirely probable that oxygen enemata may be advantageously employed in quite a variety of cases. I believe that it may be advantageously used in all cases in which there is such a disturbance of the normal interchange of gases in the lungs as deprives the system of its proper amount of oxygen. The mucous membrane of the intestines presents an absorbing surface, very small, it is true, when compared with the amount of surface presented to the air in the lungs, and yet it is sufficiently great to allow of the introduction into the system of a large amount of oxygen in addition to that which can be gotten in through the lungs; and this additional quantity, though small when compared with the total amount received by the lungs, may be of sufficient value to the system to be of immense advantage to it, especially on account of its introduction at this particular point in the circulation. The notable functional disturbances of the stomach which accompany various pulmonary disorders, such as emphysema, chronic bronchial catarrh, chronic pleurisy, pneumo-

thorax, etc., suggest a very important relation between the digestive function and the quantity of oxygen received through the lungs. The same relation is also suggested by the frequency with which dyspepsia occurs among sedentary persons who are habitually air-starved.

The administration of oxygen by enema should prove especially serviceable both in functional and organic diseases of the liver. If we accept the views of Dr. Fothergill and others respecting the relation of the liver to the excretory work of the kidneys, it being held that the liver aids in some way in the conversion of uric acid and allied compounds into urea, it is at once apparent that the introduction of a large amount of oxygen into the portal vein ought to be of service to a feeble, overworked, or disabled liver.

We should expect, also, that this remedy would prove serviceable in cases of disturbance of the glycogenic functions of the liver. We should expect also that a cirrhotic or fatty liver would, by the conversion of the venous blood of the portal vein into arterial blood, be better able to do its work than with its ordinary blood supply, which is perhaps the poorest in oxygen of any in the body. I do not forget, of course, that the liver receives a part of this blood from the hepatic artery; but this is a comparatively small part of the total amount received by this enormous and wonderfully active glandular structure, and experiment has shown that the liver may continue its work after entire suppression by ligation of its arterial blood supply.

The following cases showing the influence of oxygen enemata upon the urine seem to support the above views in a most striking manner:

Case 1.—W. P., a man æt. 28, the first case in which the oxygen enemata were employed. A case of chronic lithiasis. The exact amount of uric acid present in the urine at the beginning of the treatment was not determined, but there was the most abundant deposit of urates and uric acid I have ever observed. The deposit disappeared within two days after beginning treatment, and a careful quantitative analysis for uric acid made August 4, six weeks after beginning the treatment, showed the amount present to be only .29 grams, considerably less than the amount ordinarily found in healthy urine. This case had stubbornly resisted all other remedies, dietetic and medicinal, for several weeks before the oxygen enemata were employed.

Case 2.—A lady, æt. about 50, rheumatic, and a marked subject of lithiasis. Urine showed a heavy deposit of uric acid and urates. Analysis showed the amount of uric acid present as follows:

Before taking Treatment.—July 29, 1.37 grams; August 1, 1.30 grams; August 2, 1.84 grams.

After beginning Treatment.—August 3, .71 grams; August 8, .64 grams; August 10, .64 grams; August 14, .22 grams.

The normal amount of uric acid is placed by most authorities at less than .5 grams in twenty-four hours. It thus appears that in the second case the amount of uric acid which was at first more than three times the normal amount was diminished more than one-half the first twenty-four hours, and was in a few days reduced to less than one-half the ordinary amount.

Case 3.—A lady, about 50 years of age, who, had been reduced very low by a digestive disorder which threatened her life. For several months she had been subject to frequent attacks of bilious vomiting, sometimes continuing for several days. The vomit was sometimes grass-green, at other times black and ill-smelling. The dejections were of the same character. The patient suffered almost constantly from a most depressing nausea, even when no food was taken for days together. For weeks the only food retained was peptonized beef taken per rectum. There was a steady decline in strength and flesh until the patient was reduced to a skeleton, and was so weak that she could scarcely raise her head from the pillow. Every remedy was tried that offered any hope of relief, medicinal, non-medicinal, and dietetic, but with little relief, and that only very partial and temporary so that her friends and myself as well were about ready to give up in despair. At this crisis, it was determined to make a trial of the oxygen enemata, notwithstanding the feeble condition of the patient, which added somewhat to the difficulty of administering the treatment. As a result, most marked improvement began at once. The nausea disappeared, digestion improved, vomiting decreased, the patient began to gain in flesh, the stomach regained the power of digestion, and in a few weeks the patient was able to return to her home restored to health. At last accounts, within a few days of this writing, she was still doing well, gaining daily in flesh and strength.

Case 4.—A young man, about 30 years of age, suffering from acute rheumatism. The attack was a very severe one, and the urine was loaded with uric acid and urates. Oxygen enemata were begun on the fifth day of his sickness, when the disease was at its height, and with rest in bed, regulation of diet, simple tepid sponging, and sweating baths, were practically the sole treatment employed. The marked improvement after the use of oxygen was begun is evident from the following reports of analysis of urine:

April 2. Before beginning oxygen enemata. Quantity, 3300 cc. sp. gr.; 1028. Urea, 15.5 grams. Very heavy deposit of urates and uric acid.

April 10. Quantity 930 cc. sp. gr., 1025; urea, 37 grms. Slight, fleecy deposit of urates.

April 11. Quantity 900 cc. sp. gr., 1020; urea 39 grms. No deposit.

April 24.—The urine has become alkaline, with a slight deposit of phosphates.

Analyses of urine were made nearly every day between the first and last of the above dates. The results showed, as indicated above, a steady diminution in the amount of uric acid and a corresponding increase in urea, which was so marked as to indicate an unmistakable influence from the oxygen enemata in bringing about the favorable results.

Case 5.—Mr. H., a diabetic patient. Came to the Sanitarium for treatment on April 1, 1888. A quantitative analysis of the urine made April 2 showed 256 grms. of sugar. In less than a week this was reduced by a diabetic diet consisting of milk, eggs, gluten, cream, and non-farinaceous vegetables, to 152 grms, the amount reported by his home physician while the patient was subsisting upon a diet of meat, eggs and bran bread. At this time, the oxygen enemata were begun, two litres being administered daily. On May 2, after three weeks' treatment, the amount of sugar had been reduced to 3.1 grms. The patient has had no medicinal treatment whatever, and his diet has never at any time since coming under my care been wholly free from starch. The following table of analyses for sugar shows the gradual diminution in the quantity of sugar after beginning the oxygen enemata:

April 5, 147.2 grms.; April 9, 80 grms.; April 15, 73.6 grms.; April 21, 44.8 grms.; April 27, 25.6 grms.; May 20, 3.2 grms.

Certainly the remarkable decrease in the daily amount of sugar passed in the urine must be attributed to some efficient cause, and the only one to which any such result could be reasonably attributed was the oxygen enemata, as the patient had previously been kept for months upon a strictly diabetic diet, without any favorable result. Future experience, however, must determine whether the results obtained are anything more than temporary.

Case 6.—A man of 28 years, suffering from Bright's disease of the kidneys—chronic parenchymatous nephritis—passing large quantities of albumen daily, and abundance of casts. Examination of urine made before beginning the treatment showed six grams of albumen, and smooth and granular casts, pus, uric acid, and urates. Quantity 1100 cc. sp. gr., 1015. Urea, 24 grms. After six weeks treatment with oxygen enemata, the amount of albumen present was found to be less, casts and pus less abundant. Quantity, 1490 cc., sp. gr. 1017. Urea, 37.25 grms., no urates nor uric acid.

Numerous other cases might be added to this list, but the above are sufficient to show what can be done in a variety of cases in which, upon theoretical grounds, we should expect benefit from the administration of oxygen in this manner, if it is a really efficient therapeutic agent. I trust the results shown are at any rate sufficiently striking to call the attention of the profession to

the value of oxygen as a remedial agent, when administered in the manner described in this paper.

Oxygen enemata may be administered by means of the apparatus used in administering sulphuretted hydrogen; but it may be much more accurately used by means of an apparatus described by the writer in a paper entitled "A New Form of Apparatus for Administering Gaseous Enemata," read before this Section one year ago. The treatment may also be given much more conveniently with this apparatus.

GRADUAL DILATATION OF ŒSOPHAGEAL STRICTURES.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY T. D. DAVIS, A.M., M.D.,

OF PITTSBURG, PA.; SURGEON TO MERCY HOSPITAL, SURGEON TO ST. FRANCIS HOSPITAL, FELLOW OF THE AMERICAN ACADEMY OF MEDICINE, ETC.

Obviously there is no more serious lesion than closure of the only passage leading to the stomach. Fortunately nature has guarded the œsophagus so that its freedom from disease is noteworthy, and its most frequent lesions are the result of external causes, neoplasms, or due to diseases of contiguous tissues. So rare and surely fatal have strictures of this passage been that until within recent years but little has been done in attempting permanent relief. The gravity and urgency of the symptoms have possibly prompted equally grave and heroic remedies, such as divulsion, cutting, gastrotomy, etc., until now it seems needful to call attention to more conservative methods of treatment. In striving for the brilliant, possibly the safer and more simple plans have been neglected.

Neoplasms of the passage itself, or of adjacent structures, may cause stenosis, but I wish now to consider only cicatricial strictures of the œsophagus. These are produced by any cause that will destroy its coats. When either its mucous or submucous coat is destroyed, the resulting cicatrix is composed of smooth, hard, imperfectly organized tissue, that projects in ridges, or causes the adjacent mucous membrane to be puckered up into folds. If the continuity of the deeper tissues be also destroyed and the muscular coat invaded, the resulting cicatrix is very firm and callous, and the symmetry of the passage much contorted. Not only may the scar itself thus cause stenosis, but by its derangement of the circulation a secondary hypertrophy of the mucous membrane may result.

Direct violence has been known to cause such destruction of these tissues—such as injuries by sword juggling; swallowing foreign substances, as bones, coin, artificial teeth, or the too violent efforts to remove them. Syphilis, too, has in recent times been supposed to cause ulcers of the œsophagus, and it is not entirely free from the non-specific round ulcer. By far the most common

cause of such destruction of tissue and its resulting cicatricial stricture is the swallowing of caustic substances. The comparatively recent introduction of powerful caustics into domestic use has alarmingly increased the number of these cases. Dr. Campbell has reported to this Association¹ no less than twenty accidents from swallowing "concentrated lye," occurring in his immediate neighborhood, and from my own experience I should judge the number throughout our country, if known, would prove appalling. In the last ten years six deaths from swallowing concentrated lye have been reported to the Board of Health of Pittsburgh. But these are only those who died from the immediate effect of the caustic, and by no means represent all who have perished from this substance, because those who died from the later effects would be reported, even if the primary cause was known, as dying from inanition, marasmus, etc.

It has been my fortune to meet a number of these accidents, and the success of my treatment has led me to present the subject for your consideration to-day. I can possibly best do so by presenting the cases in detail, for brevity omitting minor points.

Case 1.—In April, 1880, Henry C., aged 4 years, had been playing in the yard and came crying into the house with his mouth bleeding, leading the nurse to suppose that he had fallen out of his swing. He vomited and slavered thick saliva, tinged with blood, for several hours. On seeing him four hours after the accident he presented no appearance of shock nor any febrile reaction. His mouth was fiery red, leading a physician who had been called in before I could see him to suspect diphtheria. There was no sign of excoriations of tongue or fauces, but his mouth looked more as if he had been chewing nettles or some non-corrosive irritant. Oil and demulcents were freely given and by this time they were well retained. On the following day evidences of corrosive action were quite manifest, especially in the center of his tongue, but not at all in the fauces. From information afterward received, I have no doubt that he swallowed a solution of concentrated lye from an old empty can that had been carelessly thrown in the yard.

As his mouth rapidly healed, and he showed no further stomach trouble nor constitutional effects, I unfortunately concluded that he had escaped swallowing any of it, or if he had, that it was so weak as to do no harm. In five weeks I was called to see him again, when I was informed that he was having repeated attacks of vomiting, soon rejecting the small quantity of food he took, together with an immense quantity of slimy mucus. He had lost considerable flesh, and his face presented the haggard, anxious look of craving hunger. An oesophageal stricture was immedi-

ately diagnosed, and, with the assistance of Dr. W. R. Hamilton, a No. 2 flexible catheter was with great difficulty passed through to the stomach. The difficulty was caused, first, by the great dilatation of the oesophagus that had taken place above the stricture, making it extremely hard to find the natural passage and avoid making a false opening through the attenuated walls; and, secondly, the size of the stricture itself, which grasped firmly the small catheter. These difficulties, together with the struggles of the child, made the operation one of considerable delicacy and caution and rendered the prognosis, by every physician who saw him, extremely grave.

Immediately after passing the catheter, the child would be able to swallow a few spoonfuls of milk, but in a few hours the tenacious mucus would again accumulate and occlude the passage. In a short time the child realized the relief afforded by the dilatation and waited rather anxiously for the operation, often bringing me the tube to insert. In order not to hurt him, that I might retain his co-operation, I increased the size of the tubes very slowly, and thus stumbled almost on a very satisfactory plan of treatment—that of *very gradual dilatation*.

In six weeks, by thus carefully, regularly and surely dilating, without pain and with but little inconvenience, the opening had reached a size that I felt safe to allow the parents to use the bougies themselves. I increased them gradually, and by five months we were using a No. 2 rectal bougie, which I considered about the normal caliber of the oesophagus of a child of that age, although the relative diameter and length of the oesophagus of children I have nowhere found estimated or recorded.

This case has ever since been under my observation. For the first few years the bougies had to be inserted every few weeks. If he failed to masticate his food thoroughly it gave rise to retching. During the last year the tube has been inserted but a few times, and the marked symptoms of the stricture have disappeared.

Case 2.—In June, 1881, Bessie W., aged 30 months, drank some water out of a can half full of concentrated lye, which had been carelessly let stand in a neighbor's yard. I saw her a few moments after the accident, and immediately gave her half a tumbler of vinegar, which she drank eagerly, although it was at once rejected by the stomach. Her tongue, cheeks and fauces were completely whitened, and she was screaming with pain. She was bleeding freely from the mouth. Thickened mucus drivelled out in streams, and every few moments she would attempt to vomit. I followed the vinegar with table oil, and as it was rejected gave quantities of milk. She was pale and cold, and the manifestations of shock quite marked. She reacted speedily and in a few days the deeply burned portions of her mouth were

¹ "Journal of American Medical Association," October 27, 1883.

more clearly outlined. So deep was that in the center of her tongue that it was fully three weeks in healing.

Knowing beyond doubt that she had swallowed considerable of the liquid fire, at the end of the first week I introduced the largest size English flexible catheter to the stomach. It caused comparatively little distress, but was tinged with blood on its withdrawal. After a few days I introduced it again, and so every alternate day. But soon it caused too much pain and evident irritation, so I was forced gradually to decrease the size until in a month only the smallest sizes could be used with freedom from pain. At this time the child lived on milk alone and was well nourished. The œsophagus had two marked strictures, one opposite the cricoid cartilage, where it is normally constricted, and a still more tense one opposite the middle of the sternum. Neither of these were simple annular strictures, for on removing the bougie it always presented a spiral form, the result of its moulding in the passage. I had succeeded in again dilating the passage considerably, when the child unfortunately picked up a grape seed from the floor and swallowed it. The seed passed the first stricture, but became wedged in the lower one. It seemed impossible to move or pass it. Prof. James McCann saw the case with me at this critical stage, and succeeded in passing a small whalebone fillet, but joined with me in the gravest prognosis. I nourished the child by enemata for five days, when at last I succeeded in forcing the seed through.

For several weeks after, the progress of the case was quite satisfactory. During the third month I invited Dr. Hamilton, who had seen the first case, with me to visit this child. He readily passed a number eight catheter, but against my best judgment, also passed Nos. 9 and 10, insisting that it would do no harm and that I was going too slow. The largest bougie caused much pain and was slightly tinged with blood, the first I had seen since the original burn was healed. The next day she had greatly increased difficulty in swallowing, with some feverish symptoms. I was compelled to use a much smaller instrument, and on the fourth day found the catheter welling up full of pus. The too rapid dilatation had caused an abscess. For a number of days I passed no instrument, but nourished her entirely by enemata.

On resuming dilatation the progress of the case was slow but satisfactory up until a rectal bougie could be introduced easily, which was about six months from the beginning of treatment. This case is also under my observation and now, after seven years, is entirely free from any difficulty in swallowing, although the caliber of the passage is certainly less than normal. One cause of this perfect success, I believe to be, that the early treatment kept any dilatation from occurring or

any cul-de-sac being formed above the stricture.

Case 3.—Ethel R., aged 20 months, in June, 1885, drank a solution of concentrated lye, which had been prepared for scrubbing purposes. For five weeks she was under the care of a homeopathist. Her mouth was quite badly burned, but it healed in two weeks. When I first saw her she was the picture of distress, the emaciated body, hollow cheeks, gaunt, famished expression and sunken eyes, all told the unmistakable story of starvation, and yet her homeopathic physician had assured her parents that she was over all effects of the lye, but was now simply suffering from worms! On examination a stricture was found near the stomach. The dilatation of the œsophagus above the stricture was sufficient to hold a teaspoonful of food and retain it for an hour. With much patience and no little difficulty the opening was found, and day by day the gradual dilatation was kept up, as in the previous cases, and in six months resulted in complete recovery. This case differed from the others in presenting undoubted evidence of ulcers in the stomach, which however healed in due time, and now, after three years, she is enjoying good health, but like the first case is easily choked.

Beside these cases, I have attended two children whose mouths were badly burned with lye, but who fortunately did not swallow any. In addition, I have the names of four more who perished from the immediate effects, and two the results of which I do not know. This makes ten deaths, five recoveries and two unknown, or seventeen in all from concentrated lye in this city alone, beside the many unreported.²

In dilating these strictures I used the common English catheter straightened out, and mostly without their wires. Œsophageal bougies for children are not on the market, and, at any rate, increase too rapidly in size for gradual dilatation, beside the catheter, always easily attained, has the advantage of enabling you to introduce food into the stomach. On introducing these catheters the head is held as far back as it will go. The bougie is well oiled with butter, on account of its leaving no unpleasant taste. The instrument held lightly between the thumb and first two fingers is then slipped past the base of the tongue well against the posterior wall, in order to escape the epiglottis. With a slight rotary motion it is passed quickly to the stomach, where it is allowed to remain during two or three respirations. There is much less danger of exciting cough or retching if the finger or tongue depressor is kept out of the mouth. The lower two-thirds of the œsophagus being a very insensitve passage tolerates the instrument readily, and causes but little distress if held well back from the epiglottis.

² Since presenting this paper the daily press of this city has recorded the deaths of four more victims from swallowing concentrated lye, and there is still a fifth case now under treatment in my immediate neighborhood.

From a study of these cases I am well satisfied that: 1. Too much weight has been given to spasmodic stricture of the œsophagus by Michel, Campbell, Smith and others; that involuntary muscles can even have tonic spasms at all is a question, but to hold with Campbell that such a spasm can continue for eight days, calls for a stretch of the imagination beyond my power. At no time did I have any evidence of spasmodic stricture in these cases. Any difficulty in introducing the dilators was due solely to causes mentioned. The relief given by passing the bougie is readily explained, not by its overcoming spasm, but by its removing the tenacious mucus or some article of food that had clogged the passage or lodged on the shelf of the stricture.

2. The advantage of the early introduction of the bougie to prevent dilatation of the œsophagus above the stricture is clearly manifested by the history of these cases.

3. The second case certainly contrasts the rapid and gradual plans of treatment, to the great if not vital advantage of the latter. To "make haste slowly" is the only safe rule. The gradual being almost painless and giving great relief secures the co-operation of the patient. It avoids too great irritation and danger of inflammation or rupture, all of which are likely to follow rapid dilatation.

4. Are not these seventeen accidents enough to second Dr. Campbell's proposition, that some legal restriction should be placed upon the sale of this intensely dangerous substance.

5. Finally, I shall watch with interest to see if any of these cicatrices shall develop malignant disease.

DR. WM. H. PANCOAST, of Philadelphia, asked what form of bougie Dr. Davis had used and whether he had ever tried the olive-pointed or the rat-tail bougie.

DR. DAVIS replied that he used only the common English catheter, which he considered the best adapted to the treatment of children, in whom this accident was most common.

DR. I. N. QUIMBY, of New Jersey: I can endorse what Dr. Davis has said in regard to gradual dilatation of œsophageal strictures. I accept the principle also, as it applies to the dilatation of urethral and other strictures. I have seen very much harm done by too rapid dilatation, which seems to lacerate, and instead of overcoming seems to rather retard and perhaps make the stricture more firm. This probably indicates that we should go slowly. In a case which came under my observation, I took a little rubber bougie, or rather rubber tube, introduced it and then inflated it with a small syringe, thus producing a gradual dilatation, until a little discomfort was complained of by the patient, but never enough to cause pain.

DR. PANCOAST: There are one or two additional important features of the paper, one of which is

that just referred to by Dr. Quimby, and which, I am happy to say, expressed most happily my views on this subject. I refer to the fact that all mucus passages of the body should be treated by slow and very gradual dilatation. It is the most efficacious method of treatment. In this connection I have a manœuvre which I might mention to you. I have a spontaneous dilatation, by hydraulic pressure, it is true, which I secure in each case by directing the patient every time he passes urine to catch the urethra and hold it until the stricture is dilated to a slight degree by the urine in its effort to escape. I do not use the urethrotome until it is settled that no further dilatation can be carried on by other means.

The "rat-tail" and filiform bougies of French make are of great service. I have also used the hydraulic dilatation spoken of by Dr. Quimby, with success.

The worst cases of œsophageal stricture that I have ever had were, one from lye, one from cancer, and one from sulphuric acid. The patients recognize very promptly the benefit which is derived from this gradual method of dilatation. I heartily endorse the suggestion that the members of the American Medical Association be requested to report, at the next annual meeting, all the cases they have observed of stricture of the œsophagus from concentrated lye.

Another point to which I desire to refer is the fact that muscular spasmodic stricture of the œsophagus does unquestionably occur. We can easily understand how this is likely to occur if we refer to the anatomical relations of the œsophagus as it passes through the diaphragm. In the diaphragm there are three openings, the first of them for the passage of the aorta, and the most posterior and right behind that of the œsophagus, is an osseo-aponeurotic opening. The second opening is for the vena cava, and is a tendinous opening, as it is right at the junction of the central and middle leaflets of the central tendon. It is surrounded on all sides by tendinous structure. The third opening, however, is right through the muscular substance of the diaphragm. It is elliptical in form and is intended to transmit the œsophagus. It is intended to act like a sphincter upon the œsophagus. Too sudden swallowing, as we have doubtless all learned from our own experience, is followed by a closure of this portion of the œsophagus and momentary retention of the food in that passage.

DR. DAVIS: I merely want to call attention to the fact that all the cases reported in my paper were under 5 years of age, and that for this reason no complicated apparatus could be employed.

Second, with regard to the olive pointed bougie: My idea in the treatment of these cases was continued pressure. The olive point dilates while passing through, but you do not keep up the pressure by it. Having the same diameter through-

out, the catheter makes constant and even pressure, no matter to what extent it is inserted. Again, in speaking of spasm of the œsophagus, I said "tonic" spasm. I claim there is no such thing as a tonic spasm, like that lasting eight days. Of course I recognize spasmodic constriction.

DR. PANCOAST: I think that the Doctor will recollect that the great value of the filliform bougie, the great value of the bougie with olive tip, that the great value of the rat-tailed bougie is the fineness of the tip and the fact that the largest calibre of the instrument being higher up, keeps the fine point of the instrument more directly in the centre of the passage—and that is the chief value of it. My friend should also remember the difficulty experienced by many in swallowing pills, as is so often expressed by the patients.

DR. I. N. QUIMBY supported Dr. Davis' view in regard to tonic spasm of the œsophagus. He did not see how such constriction could be possible.

ELECTROLYSIS IN THE REMOVAL OF NASAL AND PHARYNGEAL NEOPLASMS.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY D. S. CAMPBELL, M.D.,
OF DETROIT, MICHIGAN.

The therapeutic value of the galvanic current in urethral hypertrophic catarrh, fibromata and mucoid growths of the uterus, etc., has been presented with considerable force of late by various writers, but more notably by Apostoli, of Paris.

He has clearly demonstrated from clinical evidence that this "not strictly surgical nor strictly medical" form of treatment has special advantages over others in the treatment of fibroid and mucous growths of uterus. In his narrations he claims to have suppressed the miseries constituting the fibroidal symptomatology to the enormous per cent. of 95, by either a sensible reduction or complete absorption of the growths. And though his remarkable successes—aided, perhaps, by the subtle manifestations of its properties—may have given color to his reports, I am fully persuaded, after a careful manipulation of this particular form of chemical force in a large number of cases suffering principally from nasal and pharyngeal neoplasms, that its therapeutic value is worthy of consideration.

But, in dealing with this apparently hidden form of treatment, I regret exceedingly that I can on this occasion but briefly allude to the manner in which material changes take place in tumor structures, as the question of greatest interest to practitioners is centred in the purely clinical and practical results of its use.

Practical experience has shown that the con-

ductivity of tissues offers a fair transmission of electrical fluid, and that the material changes which this fluid produces at the polar points of attraction is simply an electrolytical decomposition. The principle of this metabolism is based on the theory that, as the proteid is the essential material substratum of all animal organisms; and being first made active in the vegetable compound, before its conversion into animal tissues, by the action of heat and light—the source of all energy—on elementary substances, this same constructive organic property can be set free, though now a storehouse of active regenerative energy, by the agency of the same elements which gave it birth in the organic kingdom.

But a more definite chain of analytical evidence is necessary, before a rational conception of the destructive materialistic changes is made easy.

As energy (latent) is the product of activity, and whether in this instance it is stored up by vital or chemical influence, or both, its latent power can be set free by the action of these same potent elements. But this action is purely a source of heat, which is constantly expended, both in the transformation of lifeless pabulum in the construction of living tissues, and in their natural destruction. But that which we call organized pabulum is the material deposit which had its birth and growth, and after it spent its usefulness, goes on to the period of decay. The energy displayed in its organization is principally dependent on vital force; but in its decomposition it is entirely dependent on chemical action.

Viewed in that light, chemical action—the principal force in nature—is the direct opponent of vital force, and consequently the chief physical annoyance organized bodies encounter; for no sooner has cell life begun, whether it has reached the period of its existence or not, than it is acted upon by this indomitable foe. Manifestations of this are discernible in various diseases, but more notably in diabetes, where a laxity of nervous energy is plainly observed.

From this process of reasoning we are entitled to assume that any interference with the process of regular vital motion interrupts cell proliferation; and that unless its functional activity is protected and prolonged by a continuous stimuli of nervous energy, or vital force, its existence is cut off by the execution of chemical laws.

Now, as electrolytical action is the result of chemical decomposition—in a galvanic cell—its influence must necessarily be destructive to cell life; that is, if applied to any prominent degree of stimulation, negatively speaking; for practical experience has shown that the negative electrode induces a transportation of watery fluid toward it, which must eventually disturb the conditions favorable to the process of segmentation. Recognizing this fact in the normally robust segmentation and cell proliferation, can we not discern the

important influence which this chemical resultant has upon the cell processes of lower vitality, viz.: tumor structures in general, which are dependent merely on the reflected influence of vital energy for existence, as being destructive to their abnormal nature? Indeed, the application of the galvanic current on various neoplastic growths of an erectile character, and other structural abnormalities affecting the nasal and pharyngeal regions, as well as in one instance of tumor stricture of œsophagus, has convinced me that its therapeutic properties are above reproach. Clinical evidence in other departments of medical science is not wanting in combating this assertion. But though we are never sure, even of established principles, especially in a science which is being constantly attested, as in the science of therapeutics, we are entitled to accept the latest of the previously established doctrines as the soundest, until a better one is procured. So in the present teachings of electrolysis, the display which chemical decomposition produces on low structure in general may not be recognized by some. But very often such differences are the result of a too hasty formation of opinion on a new article of treatment, or too much conservatism, or centralization of preëstablished opinions, based on the ground that they are either too impatient in determining the actual merits of an agent in advance of their time, or are above-board in attesting anything they have not already learned. However, the mode of the electrical current may not be clearly defined; but that it facilitates the absorption of interstitial deposits of lymphatic cells, is as clearly discernible as are the results of its influence on tumor structures, to me. Clinically speaking, the patient is the living exhibition of its therapeutic or surgical value. And though the regression of the growths is not as plainly observed during active treatment as after it is entirely suspended, is convincing proof of its enduring qualities.

As a clinical illustration of the actual merits of the galvanic current, based on a series of careful manipulations, let us take a typical case of fibroid growth of either the nasal or pharyngeal regions, and observingly study from day to day the effects it has upon it; that is, until from eight to fifteen applications are given of a current intensified to suit the wants of the manipulator. Beginning first with a ten minutes current application, to be increased to twenty after the eighth, an immediate congestion ensues, continuing for about twenty-four hours, and which exudes from its surface a watery secretion. Following this non-inflammatory phenomenon, a glazed and rather shrivelled appearance of the tumor is observed, but with no apparent reduction. Repetitions of this treatment, including up to the sixth, and in some instances as high as the twelfth, do not seem to change the appearance, nor alter the size of the growth. But when the proper intensification be-

comes bearable, distinct and effectual changes are noticed. But whether it is owing to the preparatory measures of the feeble that the destructive influence of the higher current is due, I am at a loss to say. Yet, judging from the similarity of their respective dispositions, cannot but grant some value to the former, though the display of the latter is most prominent, showing visible regressive changes after each regular intensified dose. The appearance of the growth, shortly after the first sensible current introduction, showed signs of a general disintegration of the cell processes, with diminution, which increased on every application afterwards, until a complete dissolution or death of the structure occurred.

This brief description of the effects of the galvanic current on a simple fibroid naturally suggests to the inquirer the probable number of treatments necessary to its disposal; also the relative number of different pathological formations I have operated on, so as to determine on what plane of experience this novel form of treatment is to be placed.

My experience thus far has been that, as growths vary as to their natural vitality and composition, as is observed in the malignant cell variety, in comparison with the benign, the number and quality of doses will invariably vary correspondingly. Those of slow formation have greater resisting power than the cells of rapid growth; and as abnormal structures of fibroid character possess in no small degree the tenacity of the natural fibrous tissue cell—both consisting of a homogeneous mass of wavy interlacing fibres of ultimate strength and vitality—it is reasonable to suppose that a greater intensification of electrical fluid is required to disturb their functional capacity, than those constituting the myxomata, myomata, papillomata, adenomata, etc., though their conductivity may be equal. Hence the difficulty in approximating a uniform system of quantitative treatments. However, by dividing the number of applications by the number of cases operated on, we may find the average number of doses. But they do not show any relative value; for, in one instance I have in mind, a small, dense fibroid growth of vault of pharynx, over forty applications of a highly intensified current had been given before a sensible reduction of the growth occurred; whereas a feeble current on several pharyngeal fungosities did not require, on an average, more than six.

The field of observation from which I have gleaned these facts, of the powers which this natural force wields in the decomposition and also absorption of tumor structures, may not cover a sufficient number of specified cases to warrant its general adoption, but, as a matter of preference in forty-five tabulated cases, viz.: twelve myxo-fibromata of nares, five laryngeal fibroids, eighteen cases of adenoid vegetations of posterior nasal and

pharyngeal surfaces, three angiomas and seven cases of papillary growths variously situated, but principally on sides and base of tongue and palatine arches, am fully justified in endorsing it, as an instrument in the hands of the educated of rare value; as an agent which is better adapted to suit the wants of the occasion than any surgical device at present known. Indeed, all things being considered, where a growth cannot be properly extirpated by either the crushing or cutting process without injuring important structures; or when a surgical procedure would be highly proper, but cannot be performed without doing violence to other parts, as, for instance, where the tumor is situated behind the posterior surfaces of the turbinated bodies, or in vascular growths occupying any portion of the nasal tracts where any procedure except pressure is of account—not excepting actual cauterization—nothing can accomplish so handily or so safely the removal of these growths, as the galvanic current.

HEPATIC ABSCESS; TWO CASES.

Read before the Medical Society of the District of Columbia, March 14, 1888.

BY C. V. BOARMAN, M.D.,
OF WASHINGTON, D. C.

F. W., married, aged 34 years, white, a fisherman by occupation, was seized with quite a severe attack of pneumonia, March 16th, 1887; he was sick a week or ten days when he began apparently to convalesce, and became so much better that he left the city and went down the river to one of the fishing shores of which he had charge. He remained there possibly a week or ten days, exposed to inclement weather and constant wading in the river. Whilst pursuing his occupation he was again seized with intense pain in his right side, accompanied with cough and difficult breathing; owing to the pain and great debility he returned to his home and endeavored to treat himself, not sending for me until April 27, when I found him suffering with a well marked case of pneumonia, involving the middle and lower lobes of the right lung. In a few days the pain partially disappeared, and Mr. W. appeared to be much better and left his room and came down stairs. A few days after the pain returned, of a sharp, lancinating character, accompanied with cough, rusty sputa, accelerated breathing, and high temperature.

This state of affairs went on from day to day, the pain remaining and frequently becoming unbearable; the sputa changed and became bright red in appearance, which was the case for several weeks, when he was seized with several active hæmorrhages, but prior to this his temperature fell, and I failed to use the thermometer afterwards. About May 10 he was seized with a most

severe pain in the epigastrium, shooting from the right hypochondriac region across to the left, tenderness on pressure, and a slight bulging of the parts just below the ensiform cartilage, very sensitive and hard to the touch.

He remained in this condition up to June 1st, constantly spitting blood, which appeared to give him some relief from pain, as when it would diminish or be checked by treatment the pain would become unbearable, until the hæmorrhage recurred.

About June 1st the pain became more intense, causing the man to writhe and scream out; it was located immediately over the epigastric region; the sputa became darker and mixed with pus of an intolerable fœtid odor; bowels were regular and natural in color throughout his entire illness, emaciation great, breathing quick and difficult; countenance anxious and indicative of great suffering, with little or no sleep, as the most powerful narcotics had but little effect, either in relieving pain or producing sleep, although I administered morphia in half grain doses repeatedly, both by mouth and hypodermically.

I have never, in all my professional life, seen such intense suffering. His screams could be heard on the front street at times, and continued without intermission day and night for over a week, medicine having no effect. I would not like to mention the amount and quantity of narcotics and anodynes I gave this man in various ways, for fear of being thought untruthful; but suffice it to say that I made use of every opening possible to introduce medicine into his system, to give relief; then I attacked the surface with blisters, and sprinkling morphia on the abraded surface, but without relief; everything failed until tired nature could stand it no longer, and sleep came to the sufferer, giving him temporary relief. I sustained the patient during his entire illness by administering large quantities of whisky, ammonia, and the various beef essences, together with milk, eggs, etc. He would frequently consume over a pint of whisky in one night, together with nourishment of various kinds.

The case was a most obscure one in every way to diagnose. I was satisfied that the lungs were seriously affected, and after a careful exploration of the chest, came to the conclusion that there was fibroid degeneration, he having had a severe attack of pneumonia.

Now in regard to the other difficulty, the intense pain and the slight bulging in the epigastric region, hard and tense to the touch, and exceedingly tender, there was a difference of opinion; I upon two or three occasions imagined I could feel fluctuation, but another physician examined it and failed to agree with me. Another hint in regard to this enlargement was, a hereditary predisposition to malignant disease of the stomach existed, the man's father, grandfather,

and other relations having died of cancer of the stomach.

In his case there existed very few symptoms of cancer, excepting the intense pain; besides, he was only 34 years of age, and did not present the peculiar cancerous hue of the skin, nor was he jaundiced.

I diagnosed the enlargement in the epigastrium as caused by the presence of an hepatic abscess, and even suggested the propriety of introducing an exploring needle into it, but was not allowed to do so.

The patient gradually grew worse from day to day. The emaciation and debility increasing, his appetite failed him, and his stomach began to rebel against the use of stimulants. About June 4th another peculiar symptom presented itself, and I was sent for in great haste, and must acknowledge that I was very much surprised upon my arrival; the man's face, neck and shoulders were puffed up out of all proportion to the rest of his body; his face was full and round, even his ears were enlarged; the arms and hands were very nearly as large again; severe paroxysms of pain would occur, and his face would then become very dark, which discoloration became permanent; his cheeks, nose, neck and ears were of a dark blue color, his extremities as cold as marble and bathed in a clammy sweat. Every symptom indicated immediate dissolution.

After the active use of stimulants and the application of heat to his extremities, and brisk rubbing, he rallied, but the swollen and discolored features remained. The swelling was emphysematous in character, and no doubt depended upon the escape of air from the broken down lung tissue.

These attacks of prostration would recur two or three times daily, but by administering stimulants, etc., he would rally, until at length he refused to take anything, nor would he allow anything to be done for him, stating that he wished to die, and that he would not suffer the torture of having his life prolonged.

He died June 10, 1887, at 10 A.M.

Post-mortem Examination.—I made the post-mortem examination at 5 P.M., June 10, assisted by Dr. James Fraser. Body pale, livid, discoloration of the dependent parts to a slight extent, rigor-mortis well marked, with no appearance of decomposition.

Upon making an incision into the abdominal walls I found but little adipose tissue; in the epigastric region, where the prominence existed, I found a large abscess of the liver, strongly adherent to the adjacent peritoneum and surrounding tissues; several smaller abscesses were dotted around the larger one. I had to rupture it to remove and elevate the liver. It was filled with a thick dark grumous substance (about a pint) and was located at the junction of the right and left

lobes. After removing the liver I made a section of the right lobe and found another large abscess, not communicating with the above one. There were four abscesses in number, and numerous smaller ones around the larger ones.

My attention was drawn to the diaphragm by its peculiar bulging appearance just below the lower lobe of the right lung, and also the presence of several small abscesses scattered over the under surface. I made an incision into it and there was a perfect gush of fluid similar to that contained in the hepatic abscesses. After sponging out all of the above I examined the lung and found it entirely broken down and in a gangrenous condition, the odor being unbearable and the substance of the lung tissue dark and semi-fluid, similar to the sputa expectorated. I did not pursue my investigations any further, owing to the late hour and bad light.

Case 2.—A lady, aged 69, had been sick for three years. Prior to this time she was comparatively well, stout, and without the history of any transmitted disease. Three years ago she began to have attacks which led me to suppose them due to the passage of gall-stones. I had examined the evacuations carefully after each attack, but could never find any calculi. The attacks increased in frequency and severity. For the past two years she had been confined to her bed. Then she began to have daily rigors and fever, accompanied with vomiting and intense pain in the epigastrium. Lately she had had one or two attacks daily. She was jaundiced and there was bile in the urine. The stools were light colored. A month prior to death she stopped complaining of pain, but the vomiting continued daily until two days before death, when it ceased. She died March 7, 1888. The necropsy showed several abscesses in the liver.

No. 1104 Maryland Ave., S. W., Washington, D. C.

MEDICAL PROGRESS.

TREATMENT OF ANÆMIA IN CHILDREN.—DR. A. JACOBI says the medicinal treatment of anæmia must fulfil the causal indications first. That which depends upon chronic gastric catarrh requires, according to circumstances, alkalies or hydrochloric acid, pepsin, bismuth. Beside the well-known subcarbonate and subnitrate, the salicylate has made many friends of late, deservedly. Pepsin and dilute hydrochloric acid are best combined; a baby of a year may take six or eight drops of the latter in six or eight ounces of water daily, or the acid may be mixed with milk according to the formula given in a previous essay. Disease of the kidneys has its own indications. The regulation of the heart's action—which, when abnormal, is the most frequent cause of habitual epistaxis,

and of gastric catarrh and hepatic congestion—is the first indication in secondary anæmia. Many a gastric catarrh will not get well without digitalis or some other cardiac tonic, and persistent nose-bleeding is apt to improve immediately after the administration of digitalis, with or without iron. Thus, in a great many cases, anæmia is “cured by digitalis.” In a similar manner digitalis can be utilized for the purpose of more competent oxygenization of the blood. When the heart is weak, and the lungs, by virtue of old pneumonic infiltrations, offer to great a resistance to an easy circulation in the pulmonary vessels, it is again digitalis (or its equivalents) which facilitates the extensive contact of the oxygen of the atmosphere with a larger number of blood-cells.

The insufficient innervation of the muscular tissue of the heart, stomach, and the rest, which is one of the most serious results of anæmia, is corrected very happily by strychnia or other preparations of nux. An infant a year old tolerates and requires one-fortieth of a grain of strychnia, or one-fifth of a minim of the fluid extract of nux, daily, for a long time in succession. These preparations may easily be combined with any other medicinal administrations.

Iron is looked upon as the sheet-anchor in anæmia. It is mostly indicated in cases of primary uncomplicated anæmia. A catarrhal stomach does not bear it well; when the stomach, however, is abnormal in consequence of the general anæmia, iron improves both the general condition and the stomach. In many of these cases the addition of bitter tonics is advisable; strychnia is perhaps preferable. Anæmia after malaria, dropsy from anæmia, and chronic nephritis, anæmia with neuralgia, anæmia with (and from) valvular diseases which do not result in local congestion,—mainly incompetency of the aortic valve,—are greatly benefited by iron. Anæmia after chronic diarrhœa requires great care in its use; in most cases it can, or ought to be, avoided. While it is very beneficial in the predisposition to hæmorrhage, it must be avoided in hæmoptisis. It is contraindicated in inflammatory fevers, for it increases pulse, arterial pressure and temperature. But in infectious fevers, such as erysipelas and diphtheria, it is very efficient. It requires good digestive powers, and, to combat anæmia only, no large doses. The total amount of iron introduced into the system in the daily food does not exceed much a single decigramme (one and one-half grains), and that contained in the blood of the adult has a total weight of three grams only. Still, it is quite possible that the iron introduced into the stomach fulfils more indications than that of supplying hæmoglobin.

Of the preparations mostly in use, either official or otherwise, I have mostly employed dialyzed iron, a few minims several times daily, the tincture of the malate, twelve to thirty minims daily,

and the same, or somewhat larger doses, of the tinct. ferr. acet. æth. and tinct. ferr. chlor. The dry preparations are the phosphate, one to two grains three times a day, and the same doses of the carbonate (saccharated). The latter is aptly combined with proper doses of bismuth. The syrup of the iodide of iron is well tolerated by the youngest infants; as many drops as the baby has months may be given three times a day up to eight or ten drops a dose. It is well tolerated by the stomach, in which the iodine is freed from the iron and acts as an antifermentative. Besides, experience appears to confirm the theoretical inference that it proves its power as an absorbent in cases of anæmia complicated with glandular enlargements. The syrup of the hypophosphites cum ferro of the Pharmacopœia may be given in larger doses; this is the preparation which I frequently select when I mean to add the fluid extract of nux vomica. It is self-understood that I prefer the legitimate preparations of the Pharmacopœia to the wares of the agents and advertisers, “physicians’ samples” or no.

For subcutaneous administration the pyrophosphate of iron with citrate of sodium and the albuminated iron have been recommended. As anæmia is a chronic condition which requires “chronic” treatment, it is not very probable that this mode of employing the remedy is very available.

The administration of iron appears to have an indirect effect also, which is apt to do much good. As a rule, the inhalation of oxygen gas, continued for five or ten minutes, in intervals of from an hour to two hours, seems to improve sanguification and metamorphosis considerably. This wholesome action, it always seemed to me, was most perceptible while iron was administered. To admit oxygen red blood-corpuscles are required; it appears that the influence of iron on their organization and numbers renders the introduction of oxygen into the blood easier and more beneficial.

Some of the worst forms of anæmia are greatly benefited by arsenic. They are those which result from long-continued inanition and slow convalescence, in which the stomach does not suffer; from primary catarrh; from chronic malaria; from chronic tuberculosis of the lungs; from chronic glandular swellings of a malignant type, either lymphoma or sarcoma. In all of these forms it is highly useful. The doses need not be large, but may be increased slowly. One-hundredth of a grain of arsenious acid, or one drop, or one and a half of Fowler’s solution, three times a day, after meals, the latter amply diluted, are well borne for weeks, even months, without interruption, by a child of four or five years. In malaria, the remedy may be given with quinia (and iron), in other forms with strychnia (and iron); in phthisis, with digitalis.

The gradual increase of the doses of arsenic

may be effected in the following manner: A drachm of Fowler's solution is diluted with sixty drachms of water; three doses of this mixture are given daily. If the initial dose be one drop, give a teaspoonful; the next dose is a teaspoonful + one drop, the third dose a teaspoonful + two drops, and so on, until the sixty-first dose consists of a teaspoonful and sixty drops. Thus the original dose is gently and slowly doubled in twenty days.

Children bear arsenic better than adults, and very much better than senile patients. Still, even they must not take it when they are affected with gastric disorders; nor continue it when in the course of treatment conjunctivitis, œdema of the eyelids and face, or diarrhœa make their appearance.—*Archives of Pediatrics*, July, 1888.

THE TONGUE AS A GUIDE TO DIAGNOSIS OF LESIONS OF INTRA-CRANIAL VESSELS.—Examination of the tongue is usually confined to the upper surface, little or no attention being given to the under surface. DR. GILLOT asserts that this portion of the tongue often presents certain points of diagnostic significance to reward the physician for his trouble in inspecting it. It is the condition of the superficial ranine vessels, especially, which is to be studied in this inspection. In a young and healthy person the veins alone are prominent beneath the mucous membrane, but with the advance of age, or as a result of disease, these veins become dilated, tortuous, or varicose, and the venules and capillaries become visible. In many cases little dilatations, like grains of sand, may be seen on the smaller vessels. These may be so minute as to be detected only with the aid of a lens, but are ordinarily readily visible to the naked eye as little projections the size of millet-seeds. They may be few and disseminated, or may be very numerous and grouped together like a bunch of grapes. They are ordinarily situated a short distance from the tip of the tongue, on either side of the median line, or near the root of the organ. Their color varies, according to their size and the condition of the general circulation, from a bright red to purple, or almost black.

These projections, Dr. Gillot states, are true miliary aneurisms caused by a thinning of the walls of the vessel, and are analogous to the miliary aneurisms occurring on the cerebral vessels. But more than this, they are diagnostic of this condition in the vessels of the brain, or at least should raise a grave suspicion of its existence. The circulation of the tongue has very close relations with that within the cranium, the same influences which act upon one acting also upon the other, and the inspection of the under surface of the tongue furnishes as valuable an indication of the state of the cerebral circulation as does an examination of the fundus of the eye, while it

can be readily made without instruments and does not require of the physician any special training, as does the use of the ophthalmoscope.

The primary cause of these miliary aneurisms, of the tongue as well as of the brain, Dr. Gillot refers to the so-called arthritic diathesis, and he says that he has never seen these minute dilatations of the lingual vessels in any but those suffering from arthritism, a term used to denote the diathesis expressed by the manifestations of gout, rheumatism, gravel, cardiac affections, etc.

The author urges a careful inspection of the under surface of the tongue in the aged and in those presenting any lithæmic symptoms, and believes that the physician may, thereby, often derive much assistance in the diagnosis of disturbances of the cerebral circulation, and may also obtain very valuable indications for treatment, being often enabled to avert, or at least postpone, grave cerebral disorders by timely and judicious treatment.—*Medical Record*, Aug. 11, 1888.

PHYSIOLOGICAL EFFECTS OF RUSSIAN BATHS.—DR. NIKOLAI MAKOVETSKI, of Professor Manassein's clinic in St. Petersburg, has published as a graduation thesis an elaborate investigation made by him on the effect of the so-called Russian bath on nitrogenous metabolism, and on the assimilation of fat and the nitrogenous principles of food. His researches were carried out on four student friends in a condition of perfect health. The baths were given daily for five days; perspiration in a hot chamber was induced, with the usual amount of shampooing, no steam being used. Accurate analyses of the urine, etc., were made for five days before the baths, for the five days during which they lasted, and for two days subsequently. It was found that the assimilation of the nitrogenous parts of the food was diminished, the nitrogenous metabolism being increased. The loss by the lungs and skin was markedly increased, but the urine was diminished; the uric acid, too, was diminished during the days when the baths were given. The baths have the effect of strengthening the muscular and nervous systems, and of increasing secretion when there is much muscular work, especially where the food is deficient in nitrogen, when there is a large amount of nervous and mental activity, and also when there is deficient action of the secretory organs in consequence of preceding hypersecretion, or morbid conditions, such as chronic catarrh of the bronchi, stomach, intestines, or genito-urinary tract, chronic hepatic, renal, or splenic affections. In these cases, together with the baths fat and hydrocarbons are required in the food. As contra-indications, theory would lead us to include all conditions where the nitrogenous metabolism is diminished, and also those where artificially induced diminution of it appears to act prejudicially.—*Lancet*, July 28, 1888.

CATHETERIZATION OF THE URETERS IN MAN.—In the ordinary surgical treatment of disease of the kidneys it is almost impossible to be sure of the condition of both of the organs; direct catheterism of the ureters alone allows of a correct conclusion. By the use of Nitze's cystoscope the orifices of the ureters may be brought into view, and catheterism thereof permitted. IVERSEN relates the case of a man thirty-eight years of age, who came under his care with symptoms of pyelitis, but whether double or single could not be determined. The microscope showed constant presence of pus cells and, on one occasion, a hyaline cylinder. The patient was feverish, and notwithstanding general treatment, did not improve. The high operation after Guyon was performed, and by the help of electric light both ureters were catheterized. A clear fluid flowed at intervals from the right ureter, while from the left ureter there was a continuous stream of pus, with so much impetus that it was evidently under pressure. The urine was examined with the microscope. That from the right ureter exhibited blood globules, epithelial cells, and a few casts. The urine from the left kidney contained only pus. The operation was successful, the wound healed quickly, and the urine passed normally. The condition of the patient remained the same as before the operation, but having regard to the desquamative process in the right kidney, the operation of nephrotomy would have offered no advantage to the patient, and would have been attended with danger. Iversen records this case as illustrating the advantage of catheterism of the ureters, and as a warrant for its employment on any future occasion.—*Centralblatt für Chirurgie*, April 21, 1888.

PRIMARY ACTINOMYCOSIS OF THE BRAIN IN MAN.—PROFESSOR BOLLINGER relates the first recorded case of actinomycotic tumor of the brain. The patient, a woman aged twenty-six, had, in consequence of a bad state of her teeth, fed for several months on raw meat and unboiled goat's and cow's milk. In February, 1886, was attacked with frequent vomiting; this was followed by paralysis of the right abducens muscle. The paralysis extended, and was accompanied with squinting. Several paroxysms of headache then occurred at uncertain intervals, attended with loss of consciousness, and she became comatose. After death it was found that a tumor of the size of a common nut existed in the choroid plexus, encroaching upon the third ventricle. The tumor contained a gelatinous fluid with granulation cells, and colonies of actinomycetes. Professor Bollinger had given the diagnosis of cerebral tumor.—*Centralblatt für Chirurgie*, April 7th, 1888.

ANTISEPTIC ACTION OF IODOFORM AND SOME ETHEREAL OILS.—RIEDLIN finds that iodoform

has no action on the staphylococcus aureus, but in view of the fact that the different forms of micro-organisms are differently affected by the same antiseptic agent, it will not do to draw general conclusions. On the other hand, iodoform manifests strong antiseptic powers on Koch's cholera bacillus, even in the form of vapor. His experiments with some of the ethereal oils and other substances lead him to the following conclusions:

1. Oil of turpentine in 1 per cent. emulsion quickly arrests the growth of bacteria, but has no destructive action on the spores of the anthrax-bacillus.

2. Oils of lavender, eucalyptus and rosemary are the most efficient of the other antiseptic oils, but it is impossible to make emulsions which have antiseptic properties.

3. Oil of cloves possesses some antiseptic powers; all other antiseptic oils (fennel, peppermint, juniper, as well as camphor) are of subordinate value.

4. Peru balsam is a fairly energetic antiseptic, especially against the cholera bacillus.

5. Sodium sulpho-ichthyolate in 5 per cent. watery solution has but slight anti-bacterial action.—*Centralblatt für Bacteriologie und Parasitenkunde*, No. 17, 1888.

AN ANTISEPTIC SPRAY.—DR. CARL SEILER uses the following mixture as a spray for reducing acute and subacute inflammation of the nasal mucous membrane:

Sodii bicarb	3 viij.
Sodii bibor	3 viij.
Sodii benzoate,	
Sodii salicylate	aa gr. xx.
Eucalyptol,	
Thymol	aa gr. x.
Menthol	gr. v.
Ol. gaultheria	gtt. vj.
Glycerine	viijss.
Alcoholis	5 ij.
Aquæ	q. s. 16 pints.

This formula gives a solution which is sufficiently alkaline to dissolve the thickened secretion adhering to the nasal mucous membrane, and as it is of the proper density, it is bland and un-irritating, leaving a pleasant feeling in the nose. At the same time it is antiseptic and acts as a deodorizer, being in this respect far superior to Dobell's solution or any other non-irritant deodorizer and antiseptic. As it is, however, inconvenient for many patients to have so large a quantity of solution on hand, one of our Philadelphia druggists made the solid ingredients into a compressed tablet, so that one, when dissolved in two ounces of water, will make a solution identical in its effects with the solution made after the above formula, and my patients prefer the tablets to the solution.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, AUGUST 25, 1888.

MISMANAGEMENT IN THE MORRIS PLAINS
ASYLUM.

"Jersey justice" has long been a synonym for swift, sure, common-sense justice. Some of it is badly needed in the management of the New Jersey State Asylum for the Insane at Morristown, otherwise known as the Morris Plains Asylum. Dr. Edward C. Booth, who for almost six years has been medical director of the Asylum, has sent his resignation to the board of managers, and for the following reasons, given in his letter of resignation:

The system is faulty, and the best results cannot be obtained under it; yet, with a competent and reasonable man, devoted to the welfare of the patients, at the head of each department, its defects might be, to a considerable extent, remedied. It is not for me to say whether I am such a person, but it is only justice to declare plainly that in my judgment the warden is not; and in this view I am confirmed by the practically unanimous opinion of those who have had an opportunity to know how he has discharged his duties. The medical department has been made so dependent upon that of the warden that any mismanagement on his part is immediately felt therein.

[It must be said that "the system" mentioned by Dr. Booth was the result of certain by-laws adopted by the managers three years ago. Strictly interpreted, these by-laws withhold from the

medical director any authority to modify the general dietary, to designate the style and quality of the patients' clothing, even in special phases of disease, to enforce the proper laundering of clothes, to determine the color, quality or texture of bed-coverings, or of ward-furnishings in general or special cases, nor to receive packages sent by friends of the patients, and to decide what shall be given to and what withheld from the patients.]

Dr. Booth continues: I sought to correct the evils that arose by exercising the power given to me, and by defending the medical department from the warden's repeated encroachments. Thus, when the regular diet prescribed and furnished by him proved unfit, the physicians resorted freely to their power to order special diet, taking pains to cause as little inconvenience as possible. When these orders were disobeyed, as they continually were, my only resource was to complain to your board.

A public investigation was now ordered, through no act of Dr. Booth, and he disclosed the neglects that affected the comfort and treatment of the patients. In regard to the investigation ordered by the State Legislature, he says: It was my hope that the managers, who alone have the power to introduce reforms, would assume an impartial attitude. It was, therefore, a painful surprise to me to find that before hearing the evidence several of them had openly taken sides with the warden, resenting the offer of evidence of his mismanagement; and that the exposure before the Legislative Committee of abuses which it was impossible to conceal truthfully was regarded by some of the managers as an attack upon themselves. The discharge of one of my assistants, Dr. McFarlane, a physician of high character and promise, for no offense other than in zealous service in the investigation ordered by the Legislature, including a call made by him at my request upon one of the employés of the warden's department, to procure her statement, a discharge made without consulting me, and, so far as I can learn, without consulting any officer of the asylum except the warden, together with the fact that it seems to be the settled policy of the managers and the warden to inflict the penalty of summary dismissal upon any employé who should testify to abuses, destroys all presumption of a serious determination to reform the management.

Dr. Booth thus adds his name to a long roll of physicians that have for similar causes resigned their places in the Morris Plains Asylum. It seems to be in accordance with "the Genius of American Institutions," which some of our contemporaries are so fond of writing of, to select hospital wardens from a list of political workers, without regard to their sense or efficiency, or fitness for such places. Our legislators and executive officers, and the public, do not seem to know nor care to find out, in the majority of cases, what kind of person should be chosen to fill certain offices. An example of this is seen in the vote-baiting promise of a certain gubernatorial candidate to appoint, in case of his election, a railway commission composed of one farmer, one railway conductor or locomotive engineer, and one lawyer. It certainly seems strange that an asylum board, of which the late Dr. T. R. Varick was a member, could ever have adopted such by-laws as those in force at the Morris Plains Asylum. The board should have completed the farce by making the warden medical director, and restricting the duties and powers of the latter to those of a book-keeper. The trouble with the majority of hospital boards seems to be that they learn nothing from their own experience, and nothing from the accumulated experience of other boards. Hospitals for the insane cannot be conducted on the plan of a livery stable. Of course matters might be, in a certain way, simplified by assigning a certain suit of clothing and certain diet to a particular cell, room, or ward, just as there might be a rule in a hospital to put a Hamilton long splint on each patient that might occupy a particular bed, whether he have pneumonia, a fractured skull, or a broken femur; and the claim might be made that if the patient was not benefited thereby it was his misfortune. But hospitals are for the benefit of patients, not for the glory and convenience of wardens.

THE FUNCTIONS OF THE SPHENOID.

The possible functions of the sphenoid bone are discussed, and a series of experiments detailed, in an interesting paper by MR. J. A. MALONEY, in the *N. Y. Medical Journal*. In making tests to ascertain the conditions of those with impaired hearing, preparatory to applying an otophone in the case, Mr. Maloney was impressed with a sin-

gular effect in some cases of great hardness of hearing when he had reason to suspect partial anchylosis of the ossicula, or adhesions of the same when resulting from catarrh of the middle ear. It was noticed that a very low voice could be heard when the ear-piece of the otophone was placed upon that portion of the temporal bone that joins the great wings of the sphenoid, while a comparatively loud voice could not be heard when the otophone was placed over the external auditory meatus. The experiments made for determining the cause of this led to the discovery of some curious facts in regard to the sphenoid.

It was found that the impact-wave through the sphenoid was much more forcible than through the frontal, occipital or ethmoid bones. The sphenoid was made to communicate its vibrations to the diaphragm of a microphone in electric current with a telephone receiver; the drawing of a very fine silk thread, held at one end, over a free wing of the bone, could be heard in the receiving telephone. Gentle breathing against the free wing of the bone was heard in the receiver. Breathing with impact of air at the point at which the optic nerve and the internal carotid artery pass through was also heard. The only point of the temporal bone that gave like results was at the jugular fossa.

From these experiments Mr. Malony thinks it probable that the following phenomena may be traced to the sphenoid and temporal bones as factors in their development:

1. *Localization of Sound*.—The direct or maximum result in localization is probably due to aerial conduction through the meatus auditorius externus. The indirect or bone conduction being through the sphenoid (from one wing to the other, and thence to the internal ear upon the opposite side), thus probably gives a maximum and a minimum sensation by which the mental act of localization of sound is accomplished.

2. *Tinnitus Aurium*.—Owing to the extreme susceptibility of the sphenoid to conduct minute sound vibrations, may not the pumping sounds so frequently mentioned in this form of "noise in the head" be due to aneurism or some abnormal condition increasing in intensity the flow of blood through the internal carotid, ophthalmic, or great meningeal arteries in their passage through this bone, or to the same factors through the jugular, in its relation to the temporal bone?

He has produced the "singing sounds" by getting a very loose contact in a Blake telephone transmitter, the contacts of which would be, for the purpose, analagous to the articulations of the malleus and incus; whence he concludes that "singing sounds" are due to a slight dislocation of the melleo-incudal joint placed in vibration by some subjective cause, and continued by reason of the membrani tympani acting as a retractile spring, thus producing the same effect as the "Neff hammer," or make-and-break upon the induction-coil.

In regard to autophonia, remembering the theories of Gustav Brunner, that alterations in the hearing of one's own voice are phenomena of resonance, a vibration of air in the middle ear shut in by closure of the tubes, of Gruber, that autophonia is a "consonance phenomenon, caused by swelling of the mucous membrane of the middle ear," and of Sexton, that the "phenomena of autophonia are due to a disturbance of the equilibrium of tension in the transmitting mechanism of the ear," Mr. Maloney asks: When the Eustachian tubes are closed entirely (by which equal pressure upon each side of the membrana is prevented), may not the strong vibrations of air set up in the larynx and pharynx (the mouth cavity being known as a powerful resouator) be sent to the seat of audition, through the agency of the sphenoid bone, particularly at the part situated between the ethmoid and occipital bones?

May not color audition, asks Mr. Maloney, in view of the readiness with which the sphenoid bone takes up and delivers vibrations, be due to mechanical stimulation of the optic nerve by impingement of the same upon the sphenoid bone in its passage through the optic foramen?

EDITORIAL NOTES.

PRIMARY AMPUTATION OF THE LEG UN-DRESSED FOR EIGHT DAYS.—What a good constitution, country atmosphere, and "luck" can do in a case of severe injury is shown by the following case, recorded by Dr. T. J. HUTTON, of Fergus Falls, Minn., in the *Medical Record*: A family had recently arrived from the mountains of Norway, where life is chiefly pastoral, and both broad acres and farm machinery are unknown. The sickle of a mower at work seemed to fascinate a member of this family, a boy aged 9. He

followed it up and kept kicking at it with his feet—first one foot, then the other. Either failing to keep step, or because the unexpected must happen, the sickle amputated his left leg at about the union of the middle and lower third. It made a clean cut, leaving a long ovate stump. A bystander stated that upon receiving the injury the boy hopped rapidly in a bee-line about four rods, upon the sound member, then suddenly assumed the dorsal decubitus, raising his stump straight up in the air. The family was both ignorant and poor—did not even know that surgical aid could be obtained at the public expense, and so it happened I was not called until eight days had elapsed, and nothing had been done for the boy save that an old woman had tied a rag around the stump. A grayish pellicle covered the stump. There was no swelling, gangrene, feter or sepsis. There was great weakness—that was all. I remained with him twenty-four hours, administering wine, quinine, and concentrated food at short intervals. I then reamputated. He made a speedy recovery, being out-doors within a week.

"NO CODE OF ETHICS IN ENGLAND."—Says the *London Lancet*: We understand that at the last meeting of the Royal College of Physicians the Censors' Board reported upon some recent cases of alleged infringement of professional ethics. In two cases explanations satisfactory to the Board had been given, but in a third, and apparently more serious case, a decision has not yet been arrived at. It appears that the Censors' Board received information of consultations being held by certain leading Fellows of the College—gentlemen who have held some of its highest offices—with a practitioner in the West-end alleged to be a homœopath. The Censors' Board, on applying to the gentlemen, were informed that they were not aware that the practitioner in question was a homœopath, that his practice did not conform to homœopathic principles, and, indeed, as he himself had declared in response to a question from one of the Fellows, that he was not a homœopath, but an "eclectic" physician. We forbear comment upon a matter that is still *sub judice*. Nevertheless, it may be well to recall a memorable resolution of the College, passed on December 27, 1881, after full debate: "While the College has no desire to fetter the opinions of its members in reference to any theories they may

see fit to adopt in the practice of medicine, it nevertheless thinks it desirable to express its opinion that the assumption or acceptance by members of the profession of designations implying the adoption of special modes of treatment is opposed to those principles of the freedom and dignity of the profession which should govern the relations of its members to each other and to the public. The College, therefore, expects that all its Fellows, Members and Licentiates will uphold these principles by discountenancing those who trade upon such designations."

THE NEW YORK POST-GRADUATE SCHOOL.—During the winter session of 1887-1888 more than 335 different physicians attended the courses in the New York Post-Graduate Medical School and Hospital, an increase of more than 60 per cent. over last year. In the Hospital Department, about 400 operations were performed, all of major importance. To all of these the matriculates had access, as the hospital is used solely as a means of clinical instruction. This increase in the matriculation list has necessitated both larger clinical space and hospital accommodations, so that a new clinical amphitheatre has been erected, and will be used for the first time at the opening of the winter session, September 17, 1888. A new and commodious laboratory has been erected and furnished with the latest apparatus for the study of normal and pathological tissues. The nose and throat clinical room has also been enlarged. Professors Abraham Jacobi, Robert F. Weir, Joseph E. Winters, L. Bolton Bangs and Peter A. Callan, have been appointed to the Faculty. The session of 1888-1889 promises to be the most prosperous ever held.

AMATEUR TREATMENT OF EPILEPSY.—It is not often that amateur doctors get the punishment they deserve for officious, foolish and dangerous meddling. The newspapers have recently mentioned a case in which one got his just deserts. He had tried to stop an epileptic fit by pouring cold water into the mouth and upon the neck of the patient. After a short struggle the sufferer sank back apparently dead, when the would-be doctor became alarmed and placed his ear at the mouth of the patient. This seemed to revive the patient, for he caught the ear in his teeth and chewed it until, the record says, "its beauty had vanished." The epileptic was arrested on a

charge of mayhem, but was discharged on the ground that he was not responsible for what he might have done in a fit. Would the amateur doctor have deserved nothing in the way of punishment had the patient been suffocated by the silly interference?

A FRENCH SEWAGE-DISPOSAL COMMISSION has recently visited Berlin to inquire into and report upon the sewerage of Berlin, and its works of sewage-disposal. Referring to this visit Herr Stadtrath Marggraff says: "The gentlemen composing the commission referred to, with Dr. Cornil at their head, expressed themselves on the whole very satisfied with all the results they saw achieved by our irrigation system, eulogized in particular the general cleanliness everywhere visible; while they were most favorably impressed, not merely with the good appearance of the crops grown, but above all with the excessively clear and undisturbed character of the effluent obtained.

QUACKS PREFERRED.—The French medical press gives a curious instance of preference for quacks. A provincial magistrate received complaints that a certain person was practicing medicine illegally. The quack admitted that he practiced, but produced a diploma showing that he was Doctor of Medicine of the Faculty of Paris. He explained that while he was unsuccessful as a legitimate practitioner, as soon as he concealed the fact that he was a graduate, and posed as a quack, his fame began to spread, his income grew, and he saved and invested a considerable sum of money. He begged the magistrate to keep his secret, being sure that if it was known that he was a qualified man he would lose all his practice.

"RECOMMENDED BY ALL PHYSICIANS."—An English antiquarian has been delving among old newspaper files and has discovered what he says is the first commercial advertisement ever printed in a newspaper. It appeared in the *Mercurius Politicus*, of London, dated September 30, 1658. It runs as follows: "That Excellent and by all Physitians approved China Drink called by all the Chineans Tcha, by other nations Tay alias Tee, is sold at the Sultaen's Head Cophee House, in Sweeting's Rents, by the Royal Exchange, London."

M. MAREY, Director of the physiological station of Fonds-du-Princes, has been voted 12,000

francs by the municipal council of Paris, for carrying out physiological studies having in view a better physical education of man and an amelioration of the conditions of his work.

ILLEGAL PRACTITIONERS IN PARIS.—A charlatan of the rue du Bac, Paris, who "cured all incurable diseases," has been fined \$400 for practicing medicine illegally. Another illegal practitioner was sentenced, on the same day, to three months' imprisonment.

PROFESSOR WALDEYER, of the University of Berlin, will hereafter confine his teaching to Anatomy proper, naked-eye and microscopical. Professor Hertwig, who holds the Second Professorship of Anatomy, will teach Embryology.

PETREFACTION OF THE CARUNCULA LACHRYMALIS is recorded by DR. DOLSHENKOFF in a Russian journal. When the conjunctiva was removed from the tumor a prismatic structure, 11 by 9 mm., was found.

MEDICAL ANTISEPSIS.—The municipal council of Paris has voted in favor of the organization of the service of Professor Grancher for the application of medical antisepsis at the Hospital for Diseases of Children.

DR. LASHKEWITSCH, late Professor of internal medicine in the University of Charkow, left 50,000 francs for the founding of a laboratory of experimental pathology in connection with the medical clinic.

DR. SAHLI has been appointed Professor and Director of the Medical Clinic of Berne, Professor Lichtheim having gone to Königsberg.

THE WISCONSIN BOARD OF PHARMACY has recently convicted and fined two parties \$50 each for violating the law.

A BACTERIOLOGICAL LABORATORY, under the charge of Professor Baumgarten, is to be erected in Königsberg.

THE IOWA PHARMACY LAW is being enforced. Two grocers have been fined \$50 each for selling Paris green.

DR. W. WAGNER RITTER has qualified as Privat-docent in Mental Diseases in Vienna.

DR. SALVATORE TOMMASI, for many years one of the editors of *Il Morgagni*, died on July 13.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting March 7, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

DR. JOS. TABER JOHNSON presented the specimen and read the history of a case of

A LARGE SUPPURATING ABDOMINAL CYST.

(See p. 125, THE JOURNAL, July 28.)

DR. JOHNSON also exhibited

AN OVARIAN CYST,

sent him by Dr. Sale, of Aberdeen, Miss.

History.—The specimen had been removed from a young girl, aged 16, who had been a great sufferer during the menstrual periods for the past year. When not menstruating she was of a lovely disposition, but during the flow she would act strangely and was at times so very violent, almost insane, that she was recently ordered out of her boarding house. After considerable persuasion from her mother and family physician she consented to an operation. March 2d, he removed a cyst weighing about 8 pounds, without any difficulty. On the fifth day she was rolling about the bed and was very comfortable; the pulse had not been more than 80, and her temperature never above 99.4°; and she had not had any opiates.

DR. C. T. CALDWELL presented the specimen and read the history of a case of *Myofibroma of the Uterus*.

DR. D. S. LAMB presented *A Placenta with Three Cords and Two Sacs*.

Stated Meeting, March 21, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

DR. P. J. MURPHY presented the specimen and read the history of a case of

HYSTERECTOMY FOR MYOFIBROMA.

(See p. 197, THE JOURNAL, Aug. 11.)

THE PRESIDENT thought the Society should be congratulated on the number of important operations that had been performed by its members.

DR. BERMANN: Is it not a genuine hyperplasia of the uterus? The microscopic examination would easily determine whether it is or not.

DR. MURPHY: The first diagnosis was a fibrocyst. The small fibrous growths in the neighborhood of the large one determined the nature of the growth. If it were simply hyperplasia then there would be simply a proliferation of the uterine tissue. Examination at the Army Medical

Museum showed the diagnosis to be myofibroma.

DR. BERMANN: In support of the idea of its being a genuine hypertrophy or hyperplasia of the uterus the diagnosis of myofibroma does not exclude the other. It contains the cavity of the uterus in its body. Its cellular construction is similar to that of the uterus; and if it is covered by the peritoneum—which fact a microscopical examination will easily determine—in his mind there could not be a doubt that we had before us a very rare thing of a genuine hyperplasia of the uterus. The existence of the fibrous nodules did not seem to exclude the possibility of his diagnosis.

DR. BUSEY: The microscopical examination of the tumor has shown it to be a myofibroma. The gentlemen are misusing terms, hence the apparent difference of opinion. It is a growth of both tissues. Dr. Bermann was right when he stated that this was a growth of the true uterine structure. There may be separate and distinct fibrous nodules. Dr. Murphy was to be congratulated upon the success of the operation. He had tried electricity, but the growth had continued to increase. We have had so many reports that have promised so much from electricity as a therapeutic agent in such growths that it will be well to have a distinct understanding as to the method of application. He is prepared for any results from the use of electricity but confessed that he was a little incredulous of the marvellous cures reported by its advocates. He could understand how electrolysis might do some good, but he could not see the efficacy of a current when both electrodes were separated from the growth by considerable distance and intervening tissues.

DR. MURPHY had passed the galvanic current from a 12-cell McIntosh battery through the tumor—the sponge electrodes being placed on either side of the abdominal wall.

DR. REYBURN: Because electricity fails in one case it does not follow that it is not good in others. If the current is measured it can be given with safety. He gave the history of a case of fibroid tumor of the uterus that had been greatly benefited by six applications, by applying one electrode to the abdominal surface and the other to the thigh. After these applications she measured nearly two inches less around the abdomen over the tumor. She had been having severe hæmorrhages every two or three weeks and was nearly exhausted. He gave from 50 to 60 milliamperes, and on one occasion gave 70. He produced a severe eschar on the thigh. He thought Dr. Murphy should have used larger electrodes. Metal electrodes large enough to cover the whole abdomen are best. On one occasion he accidentally reversed the current but it did not do any harm. Electricity in fibroid tumors offers some hope. He thought it scarcely justifiable nowadays to resort to the knife. Electricity offers by far the best method of treatment. In passing strong currents we get a certain

amount of decomposition of the fluids and contraction of the tumor.

DR. S. O. RICHEY was not especially interested in such cases as that from which the specimen was removed, but was interested somewhat in the use and effect of electricity. He thought Dr. Reyburn's proposition in regard to the use of the galvanometer a proper one, but he had not heard him speak of a more important factor—the direction of the current. The proper way to secure electrolysis is with the negative pole near the part to be atrophied, and the positive near the origin of the nerve supply, passing the current in the course of the nerves and securing disintegration. A current of limited power, used for a long time, has much the effect of a strong one used for a proportionately short one, and is safer.

DR. BUSEY: Was seeking information and was not opposed to electricity. Would Dr. Reyburn tell him how he knew that the current passed through the tumor. He talks about the milliampere as if it were a therapeutic agent. He understood that it simply measured the dose.

DR. REYBURN: Of course the meter is to measure the dosage. Batteries vary. He also calculated the resistance. He had not punctured the uterus, but had applied the electrodes to the abdominal walls on either side of the tumor. The index shows that the current is passing and one can see the powerful contractions of the tumor.

DR. BUSEY: But Dr. Reyburn does not prove that he passes the current through the tumor. He wanted to know the direction of the current. If he had put one electrode into the uterus he could see how the current could pass through the tumor, but not when one electrode was applied to the abdominal wall and the other to the thigh. If the abdomen measured two inches less in the case reported by Dr. Reyburn, after six applications of electricity there was nothing surprising in it, as there may have been a loss of adipose tissue, the places of measurement may have been different, or the intestines may have been distended with gas at the first examination and not at the second. Such statements are too inaccurate for him to accept.

DR. MACARDLE: Had under observation a case similar to that reported to-night. A consultation was held to determine the advisability of removing the tumor, but it was decided to try electricity. He had since then been using a Wait's battery, with Apostoli's large electrode to the abdomen and the negative pole to the uterine sound passed into the cervix. The applications were made every other day. How long would Dr. Reyburn advise him to use the electricity to determine its efficacy?

DR. REYBURN: Hysterectomy for fibroid tumors is unfavorable and unjustifiable unless the woman's life is in immediate danger. The electricity should be faithfully tried for several months.

DR. RICHEY : Would suggest to Dr. MacArdle, that the negative pole passed through a sound to contact with the cervix—thus insulated to the point of contact—and the positive pole placed over the spinal lumbar region, might give satisfactory effects in his case. A needle at the negative pole plunged into the body of the growth would be more reliable. We must in this, as in other cases, seek immediate contact with the tissue to be influenced. To pass a current from the head to the feet, with a view of influencing an abdominal tumor, would probably not be satisfactory in its results. Those who are in doubt of the influence of galvanism might first observe its effects upon superficial growths. An effort must be made to secure immediate contact with the tissues to be influenced. How are the eschars produced by Dr. Reyburn progressing? They are often very intractable, and resist every method to control them, except a reversal of the current.

DR. BERMANN : In using the electrolytic action of the current it does not matter much, according to Apostoli, Engelmann and others, which pole is used. In strongly vascularized tumors, such as fibro-sarcomata, Engelmann advises the application of the positive pole to the cavity or neck of the uterus. As the eschar naturally produced by such strong currents as are necessary for the reduction of such tumors, varying from 60 to 250 milliamperes, might produce a hæmorrhage which would be stopped by the application of the positive pole. In nervous affections Erb expressly states that it does not seem to matter much whether the positive or negative currents are ascending or descending with the nerve-current. It would be very dangerous to apply either pole at the central nervous system, as advised by Dr. Richey, for reducing tumors, as the dangers and risks would be more than any one would be willing to assume the responsibility for.

DR. RICHEY : Electrolysis takes place only at the negative pole. He deplored the use of very strong currents in the beginning of his remarks. The proper direction of the current is still a disputed question.

The specimen was referred to the Committee on Microscopy, who reported that the tumor was a myofibroma.

Suffolk District Medical Society.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

Stated Meeting, May 9, 1888.

ALBERT N. BLODGETT, M. D., SECRETARY.

(Concluded from page 248.)

DR. HAMILTON OSGOOD read a paper on
INVETERATE HEADACHE.

The common, the non-perilous ailments of our

patients are apt to be superficially treated. Headache is a plague to an indolent medical man. He regards it as of little moment, and treats it accordingly. To the patient, however, the ailment is a serious matter, depriving him as it does of power in practical life, of enjoyment of vacation, of comfort at home. It entails annoyance to others, for it renders the sufferer irritable, unjust and uncompanionable. If he be not relieved when he might be, the physician naturally deserves blame for an evil of wide extent.

Inveterate headache may be relieved by one or more of the scores of internal and external remedies, but these merely wither the fruit without touching the root of the evil. Indeed, the management of this affection is so empirical that it recalls Voltaire's reflection upon the practice of medicine, which he said consisted in : "Putting medicines, of which we know little, into a body of which we know nothing." No sooner does a form of treatment promise success in a patient, whose look and daily history indicate that at last the headaches have yielded, when, like a thunder-clap, a new series of attack appears, and the course adopted and heretofore efficient becomes inert.

As an illustration : A lady, single, aged fifty-five, has suffered from intense headache since her youth. She has had every variety of treatment ; has consulted many physicians. Remedies which on one occasion relieved her failed utterly on another. Change of climate was extremely beneficial during one year. On returning to the same locality the following year her headache was incessant. She is known among her friends as a victim of pain, and has had every reason to feel profound discouragement. My first professional interview with her was during an attack of headache, in which, as is usual with her at such times, she seemed nearly unconscious from suffering. I was merely asked to relieve her by a subcutaneous injection of morphia, which I did, using one-half grain. Subsequently I was requested to take charge of the case. A careful examination gave me the following information : The patient was well nourished ; appetite generally good ; bowels in normal condition ; her face showed the exhaustion caused by chronic pain ; the menstrual periods (now passed) had always been regular, and, save that a headache was apt to follow them, free from annoyance of any nature. Her headache occasionally extended to the left side of the cranium, but was almost wholly confined to the right side, and never took the form of clavus. The onset of pain, however, was not peculiar to the menstrual epoch, but occurred irregularly at other times, and so frequently that the patient was never sure of being able to keep any engagement whatever. "Pain is the prayer of the nerve for healthy blood," says Romberg.¹ During the thirty

¹ Nervenkrankheiten.

years of her experience of pain this lady has taken every sort of tonic and every variety of blood-making food. The wise adage, "Eat when you are hungry, but not so long as you are hungry," has been carefully observed, as have also the ordinary laws of health.

Sudden changes of weather have always given her great discomfort. This may be explained by Wright's² computation to the effect that a change of one inch in the barometer increases or decreases the atmospheric pressure which the body of an average man sustains—by 1,080 pounds. "The results in periods of great weather fluctuations are headaches and even apoplexy." In my patient it is easy to imagine the painful effect of the abrupt oscillations in the circulation which would occur under such conditions.

The headaches I found to be invariably preceded by flushing of the right ear, the color deepening, as the pain appeared, to a livid hue. A little later the left ear became flushed, but never took on the darker color of the right. This anomaly in the circulation led me to examine the heart. I found it free from organic lesion, but the first sound was weaker than the second, and both sounds, as well as the character of the heart's impulse, indicated lack of power in the cardiac muscle. This explained the temperature of the hands, which were invariably cold, and caused me to suspect that the lividity of the right ear during an attack of pain, and the deeper co-existing color of the right face, as compared with that of the left, were due to weak heart and habitual lack of vaso-motor energy in the blood vessels of the right side of the head. This, I argued, was a logical accompaniment of the persistence of pain in this side, and probably showed a chronic dilatation, or at any rate weakness in the walls of the vessels of the right side, and which became apparent whenever the irritation of pain reflexively lessened the energy of the heart. During an attack, I further argued, these vessels probably dilated, and since "vessels of the brain are not supported by pressure of surrounding elastic muscles, and have, moreover, a less powerful construction than have blood vessels elsewhere,"³ this temporary dilation of weakened vessels created a local obstacle to the onward flow of the blood, and hence the increasing deeper hue of the visible tissues of this as compared with the left side of the head and face.

The stagnation of the blood-current is naturally followed by an accumulation of carbonic acid, and in consequence by an exacerbation of pain. A good illustration of this local condition of the circulation may be seen in the purple outlines of the blood vessels of a drunkard's nose. Here the vaso-motor energy is permanently deadened by alcohol, and we see the constant presence

of carbonic acid. In the patient in question, however, the local impurity of blood disappears as soon as the pain and its reflex effects upon the heart cease.

In behalf of my theory allow me to digress for a moment in order to relate the most striking instance of neurotic reflex which has ever come to my notice. Some years ago I was called to a lady who was suffering from severe pain in the right ear. I had frequently relieved this ear of large masses of wax, and the patient rightly suspecting the cause of the pain, had vainly tried to clear the ear in the usual way. When I reached her house the lady told me she was also in great discomfort from a delayed menstrual period now eight days overdue. It required fifteen minutes of time and copious injections of warm water to free the patient's ear from a very large mass of cerumen. The relief was immense, and, moreover, before I left the house the *period had appeared*.

It is not strange, then, that great pain in the head reflexively will lessen the power of the heart, and I feel very confident of the correctness of my argument in the case in question. After writing the foregoing, I happened to find in Anstie's clever book on neuralgia the following remark: "Muscular viscera which are composed of unstriped fibre, like the intestines, or of a mixture of striped and unstriped, like the heart, are probably very liable to a secondary paralytic influence from certain special neuralgia."

Still I was no nearer to a discovery of the original *cause* of the headaches. As to the quality of the pain I may safely repeat Begbie's words in relation to a similar case quoted by Day, in his book on headache: "It was not nervous, nor hysterical; it was not inflammatory, nor congestive; it was not anæmic; it was not dyspeptic; it was not of a rheumatic, nor of neuralgic character; it was not periostitic; it was not periodic." Finally, something in the general look of the patient, nothing positive, there being no especial symptom which could be named, suggested gout. The patient denied all knowledge of any case of this ailment in her family, but a careful inquiry into the family history revealed the fact that in several of her ancestors gout had existed. I at once determined to test this possibility, and took with me a quantity of the patient's urine for examination.

Previously, however, I ordered tincture of strophanthus in doses of four drops, which I subsequently increased to eight drops, three times daily. I may say here that even before I adopted any other form of treatment, so soon as the cardiac tonic began to show its effect in a relatively stronger first sound of the heart, the headaches became less intense in character, the discoloration of the right ear appeared less frequently, and when it did appear, was far lighter in hue. This

² On Headache.

³ Wright on Headache.

was the first proof that the headaches were partially due to weak heart.

In examining the urine, I did not make a quantitative analysis for the uric acid present, but did find the fluid intensely and unusually acid and that the specific gravity was 1,034. This, in the absence of albumen and sugar, convinced me in my suspicion of the existence in the patient of a gouty tendency.

[In a lecture upon gout, Trousseau relates a case of headache which puzzled him extremely. This was in the early days of his practice. After a long period of doubt and insufficient treatment, the case was cleared up by a frank onset of gout, in reference to which Trousseau makes the interesting remark: "I did not then know that *gout* and *migraine* are sisters."—*Clinique Médicale*, Vol. III.]

Prescribing the bi-carbonate of soda in scruple doses, three times daily, the urine soon became moderately acid, the specific gravity fell to 1,024 and during the following six months not only did the headaches become very infrequent, but when they appeared the pain, save in two instances, was not acute.

Meanwhile, under alternate use of the tinctures of strophanthus and digitalis, the circulation of my patient had improved to such a degree that the hands and feet became habitually warm, her face lost its expression of exhaustion, her eyes brightened and she looked years younger than when I first saw her. This change corresponded with a steadily increasing power in the first sound of the heart which was now stronger than the second sound. During this interval I substituted Buffalo lithia water (spring No. 2) for the soda, and the patient became more comfortable than she had been for several years, only two headaches of moment occurring during these six months.

This period of truce was then suddenly interrupted by onset after onset of intense headache, which, however, to my great relief, I soon found had their origin in the suppurating pulp of a molar tooth, so that they did not disturb my diagnosis of gouty headache. The tooth was soon relieved but the cranial pain held on. Antipyrin quieted the headache but caused unbearable nausea.

Just then appeared in *La Semaine Médicale*, Germain Séé's recommendation to give with antipyrin an equal bulk of this bi-carbonate of soda as a certain means of avoiding nausea. This proved a success and disposed of all tendency to nausea in this case and several other cases. In the patient in question, however, the drug soon became inert. The caffeine, bromo-caffeine, likewise guarana, of which caffeine is the active principle, were never of any use to her. Cannabis indica is perfectly negative and the patient is so annoyingly familiar with every other known remedy for headache and the inefficacy of all of these, that in her paroxysms

of pain you will not wonder, notwithstanding I have a strong prejudice against the drug, that I have occasionally resorted to morphia, which, of course, relieves the pain, yet is invariably followed by severe vomiting. I did not try antifebrine because by this time had lost faith in remedies of that sort for this patient.

When she came out of this storm I found that the former effectual treatment by cardiac tonics and alkalies had utterly lost its power. This fact, together with absence of relief from medicines which benefit other forms of headache, still further convinced me that gout and not neuralgia was the root of the ailment, and I finally resorted to absolutely anti-arthritis treatment—wine of colchicum and iodide of potassium—the diet being carefully regulated. That I did not do so before, in view of my diagnosis, was due to my hope that the cardiac tonic and alkalies would prove effectual, as indeed they decidedly did for six months. Almost at once after beginning to take the remedies for gout the patient experienced a heretofore unknown sense of relief. Time is needed to prove that she has been wholly relieved of her suffering, but she is already in a condition of comfort to which she has long been a stranger, and although at times she is conscious of pain it is so mild in character she does not consider it of moment, and I hope it is due to nothing more than nerve-memory. Twice weekly, I give her a strong secondary galvanic current. This is acting well as a nerve tonic and the patient is more vigorous in every sense. She is taking 18 drops of the wine of colchicum root and 8 grains of the potash, three times daily.

A prominent feature in the symptoms of this case has been the weak heart, careful stimulation of which contributed largely to the well-being of my patient during the six months of almost entire freedom from severe pain.

This point merits especial mention. I believe we neglect the heart in many cases in which if this organ were stimulated patients would sooner reach a condition of comfort. In the patient in question, notwithstanding she has been a victim of pain for thirty years, during which she has received such a variety of treatment that it is difficult to name a remedy with which she is not familiar, and in spite of having passed through the hands of very many physicians, her heart has never before been carefully examined nor directly treated.

DR. E. G. CUTLER said: I was much interested in the first case that Dr. Osgood read. After he spoke to me about the case, in looking for some cases I found that I had nothing of my own, and I found in the library, in the last report of St. Bartholomew's Hospital, a collection of fourteen cases not unlike those of Dr. Osgood. It is a paper written subsequent to another published several years ago, of cases in which was found

a large increase in the uric acid in the urine, the chief symptom being that of headache. The history of these cases always showed the existence of gout or some such affection in some member of the family, and the headache usually was periodical, either lasting for a long time, or coming on at irregular intervals, perhaps of days or hours, or weeks or months, and lasting for years. The treatment which was found most successful, I believe, was that of a diet in which there was a great diminution in the nitrogenous matter, a diet largely liquid-farinaceous; and also the treatment by hydrochloric acid. It was found by experiments which have apparently not been disproved, that under the treatment with hydrochloric acid the amount of uric acid diminished, and with alkalies it increased, and it was found that at the same time this symptom of headache would be done away with more effectually than by any other means. This article is a very interesting one, and I have not seen that it has been contradicted.

DR. PUTNAM: Dr. Osgood's paper calls to one's mind a large number of very interesting points, and of course it would be impossible to do any thing like discuss them all. That there is such a thing as gouty headache in the sense that the word "gouty" is commonly used in this country, as indicating in the most general way a disorder of the assimilation and nutrition, I suppose there can be little doubt. That is to say, that this is one of the many neurotic symptoms which are met with under these circumstances in what is called lithæmia, which is the nearest approach to gout which we have except in special cases. I think it is difficult to determine, however, to determine that the lithæmic condition acts as a cause of the nervous symptom. In the regard to the relation of the heart to headache, I suppose that we might do a good deal more than many of us do in the therapeutics of general diseases by stimulating the heart; although I think it is very hard to say many times whether the heart-sounds are a little weak or not, and that unless one examines with great care and many times, and both before and after treatment, it would be very easy to attribute to the cardiac remedy a result which really belonged to something else.

So far as the occipital headaches are concerned, I feel pretty sure with regard to some varieties of them, that they do not arise from the heart. I have seen a large number of these headaches, as every one must have who has to do with nervous diseases, because they seem to be extremely common, in connection, largely, with over-work, in persons otherwise in good health. I have, to be sure, under my care at present, a lady who suffers greatly from this headache, which continues in spite of an improvement in her general health, and she has heart disease. On the other hand, I have treated for a long time a gentleman who

prides himself on his vigor and his muscle, and he has had this headache for a very long time also, though not in a severe form, but in his case it has disappeared, apparently without any one being able to say why. At one time he thought that massage helped him, and at another time electricity. He has never presented any signs of weakness of the heart. Of course, I do not mean to imply that Dr. Osgood claims that all cases are due to that cause.

Another cause of occipital headache which should be borne in mind is one which Dr. Seguin called attention to some time ago, and that is uræmic. I have recently had a patient, a lady with chronic Bright's disease, in whose case this symptom has been present. In regard to the flushing of the ears as occurring in these headaches, as a sign of cardiac disease, I must say that I cannot agree with Dr. Osgood. I think it is well known that flushing or paleness of ears or face is a very common one in migraine. Writers have been divided as to how much influence is to be attributed to alterations in the vascular supply of sensitive membranes as a cause of the pain, or whether the pain may be due to spasm or dilatation of the vessel itself; and for my part I am of the opinion that it is only a concomitant symptom as a rule; it is common to see cases of typical migraine without any such changes that we can see, and again, vascular changes occur so often in other neuralgias that it seems to me on the whole that the fairest way of looking at it is as a concomitant symptom, and not as a rule a cause of the pain.

And that leads me to say that the patient whom Dr. Osgood first spoke of is one whose case I have known of for a number of years. I have cross-questioned her with great care in regard to the congestion of the ears, and she has assured me that although the flushing of the ears is almost always associated with the headache, the two conditions are not entirely parallel, and that occasionally, sometimes in the course of a long headache, the pain may be on one side, and the flushing on the other. As regards the gouty tendency of this patient, it is a very interesting question, and I did my best, as I thought at the time, to treat her from that point of view, a year ago. It is an interesting and important matter, and I am glad Dr. Osgood brought it up. I advised her to give up sugar and starch. She did that, and got better. She took, also, iodide of potash and lithia for a considerable time. Then, after a time that diet failed, and we tried an opposite course, giving up the meat, and confining herself to a non-nitrogenous diet, and for a time that also worked very well, so that I became quite convinced, especially as I have seen something similar in another patient with migraine, about the same time, that the effect was due to the change in treatment, not to the specific diet.

In a large number of these cases almost any change of the conditions under which the patient is living will be of service, and I will say in regard to this patient, that she was very free from headache at one time, as a result of a visit to another climate, but a second visit to the same place did no good.

DR. MYLES STANDISH: I wish to refer to the headaches caused by errors of refraction, as we have heard very little about them here this evening. A very large proportion of the headaches in young children, children going to school, are due to errors of refraction, and are cured by correction of that error. In older persons very often error of refraction is the cause. I have seen very striking, almost marvellous cases. I remember one young lady who had been an invalid for a number of years, never going out on account of her constant headache; a pair of glasses enabled her to go where she pleased, to go to picture galleries, and a year later she came back and said she had never had a headache since. It is not a single case, but we see it very often. I see many such cases every year. I have perhaps have had this thing forced upon me from my own experience in the matter. From my boyhood I have had very severe headaches every two or three weeks. When I came to the medical school I took everything that I could find in the form of drug, without any result whatever; but correction of my error of refraction have reduced my headaches. I still have them occasionally, perhaps once in two or three months, where as formerly I had them every two or three weeks; and I have gone a year with only one or two headaches. When a headache lasts all the time, of course it is not so likely to be due to error of refraction as to some other cause, but when it follows close application of the eyes, especially near work, I think error of refraction should always be ruled out before going any further.

DR. PUTNAM: I simply wish to say that I most sincerely agree with what Dr. Standish has said, and I did not speak of it because I did not think of it at the moment, and this lady had been to Dr. Wadsworth to have the refraction tested.

DR. FOLSOM: I wish to speak of a case in connection with Dr. Putnam's allusion to the analogy between these cases and epilepsy. Of course, a sensory discharge may take the place of a motor discharge. I was reminded of a patient who was a type of health in every other respect, who had a very persistent headache for a number of years. She had her eyes examined for astigmatism by a number of ophthalmic surgeons and almost every remedy tried, until it occurred to me that it might be similar to epilepsy in type. The continuous use of bromide, as it is used in epilepsy, relieved them entirely. I wish that Dr. Standish would speak of the difficulty of detecting this astigmatism, and the very minute amount, requiring most

careful examination, which may cause headache, an amount that would be overlooked by the ordinary examination. It seems to me it is a matter which physicians in general practice should know, and it is a point which has embarrassed me a number of times. As an interesting point in regard to that, a person may have considerable amount of astigmatism, and yet have no headache except under certain physiological conditions. That is to say, if in perfect health he has no headache at all; he can read and write, and do it late at night; but as soon as he begins to run down, a very moderate amount of reading and writing will cause headaches.

DR. STANDISH: It seems to me very rational that when the man's condition gets run down, his ciliary muscle might be affected.

DR. KNAPP: I agree with Dr. Standish on the importance and dangers of refractive headaches. In every case of severe persistent headaches that I see I try to get a thorough examination of the eyes for any error of refraction. I may say that it is about the only form of reflex headache that I have been led to take very seriously. I have looked for the other forms of headache which are said to be due to displaced uteri, cerumen, and this, that and the other, and as a rule I have not been able to find them. But I do find them in errors of refraction.

DR. OSGOOD said he did not understand the rationale of the hydrochloric acid treatment of a uric acid condition, and the proof that alkalies were beneficial in that condition was that his patient steadily improved under the use of them.

In reply to Dr. Putnam he said that the color of the ear in this case could not be merely a "concomitant," for that it held a direct relation with the state of the heart was shown by the fact that during attacks of pain the ear became less and less livid in strict coincidence with an actual increase of power in the first sound of the heart. Dr. Putnam virtually admits that in his cases of occipital headache fatigue or debility always co-existed. Inasmuch, then, as the heart never rests, is always at work, and has less repose even than the lungs, it must partake of the general debility or fatigue of the body, and consequently has less than its normal power to send the blood through such sudden arterial curves as exist in the vertebral arteries.

In regard to the eyes of the patients he had cited, Dr. Osgood said that in his paper he had remarked that all possible care was given to the eyes of one of them. He had also made himself certain that everything had already been done to assure the proper condition of the eyes of the other two patients. He thought there would be no disagreement in relation to his assertion that inveterate headache was one of the most troublesome and discouraging ailments with which the physician has to deal.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

National Convention of Charities and Corrections—Commitment and Detention of the Insane—Moral and Criminal Responsibility—How Shall Organized Charity Work—Immigration—State and Municipal Charities—Social Degradation—Summer Corps of Physicians—Floating Hospital.

In July, the Fifteenth National Convention of Charities and Correction was held at Buffalo, and the session was one of considerable interest. At the opening exercises there was an address of welcome by the Hon. Sherman S. Rogers, a welcome to the State by Gen. George S. Field, on behalf of Governor Hill, a response by the Hon. Philip C. Garrett, of Philadelphia, and the President's address, delivered by Dr. Charles S. Hoyt, Secretary of the New York State Board of Charities. In the latter the care of the dependant claims by the State was discussed, and the subject of insanity as related to pauperism received extended attention. Immigration and intemperance were spoken of as among the chief sources of pauperism and crime, and the opinion was expressed that European countries had been systematically sending paupers and criminals to America. As a preventive Dr. Hoyt recommends the examination of immigrants by our consuls and commercial agents abroad, the revision of the Federal immigration law, and the enforcement of the latter so as to prevent the landing in this country of all dependants and criminals.

The report of the Committee on the Commitment and Detention of the Insane, which comprises 100 printed pages in all, and was characterized by the Hon. Wm. P. Letchworth, President of the New York State Board of Charities, as the most valuable paper of its kind ever prepared, was presented by the Chairman of the Committee, Dr. Frank B. Sanborn.

In the discussion of the report Dr. Judson B. Andrews, Superintendent of the Buffalo State Insane Asylum, argued against the practice of taking insane patients to an asylum under false pretenses, holding that they should know where they were going and that they should be under the care of trained nurses. He believed in the commission system, and opposed the *habeas corpus* system of taking patients from insane asylums.

Dr. Wise, Superintendent of the Willard Asylum, opposed the recommendation that insane patients should be cared for by physicians of their own sex, and contended that they should have the best medical attendance that could be obtained, no matter what the sex of the physician. In his own wards he had found that three-fourths of the women patients preferred a male physician.

Dr. P. Bryce, Superintendent of the Alabama

Insane Asylum, at Tuscaloosa, read an elaborate paper on *Moral and Criminal Responsibility*, in which he discussed the physical and mental organization and the influence of circumstances upon the individual as related to the commission of crime. This was followed by a paper on "The Prevention of Insanity by the Timely Control of the Dissolute," by Dr. J. C. Fisher, Superintendent of the State Almshouse, at Tewksbury, Mass. Dr. O. W. Archibald, Superintendent of the North Dakota Insane Asylum, read a paper on "Practical Hints on the Care and Treatment of the Insane," and Dr. A. B. Richardson one on "Brain Hygiene." A report was then presented by the Committee on the Training and Care of the Feeble-minded, and after it had been discussed at some length, Dr. A. C. Rogers, of Faribault, Minn., read a paper on "The Functions of an Institution for the Feeble-minded."

The delegates to the Convention were substantially agreed as to the value of charity organization societies, as shown in the discussion of the subject, "*Organized Charity, How it shall Work, and the Success that it has met with.*" Among those taking part in it was Mr. John M. Glenn, of Baltimore, a blind delegate, who warned his hearers against giving alms to blind beggars. He said that he never knew of one who did not on investigation prove to be either an imposter or a criminal, and he believed that the blind beggar was almost always a mendicant from choice rather than necessity.

Among other subjects discussed were, "Drunkard's Families," "The Treatment of Poor Widows with Dependent Children," and "Immigration." The report of the Committee on the latter was presented by the Hon. Philip C. Garrett, of Philadelphia, and it was stated that the objections raised against immigration were moral, industrial, national and political. It was surely conducive to the industrial well-being of the country that it should be strengthened by a steady current of immigration; but how to keep the current healthy and not excessive, and not restrict it to certain nations or certain classes, was a problem not easy to solve. The present law was criticized, not for prohibiting convicts, paupers, imbeciles and cripples to land, but for lax administration, and because it dealt most leniently with the two most dangerous classes, criminals and anarchists. These were poisonous to American society, and it should not be possible for such individuals, who did not assimilate with our institutions, to become voters. The legislation needed should provide against importation of persons holding anarchistic opinions and of convicted criminals, and should give to the United States courts power to return such persons within five years; while the naturalization laws should be modified in order to prevent the naturalizing of these dangerous classes.

Ex-Mayor Seth Low, of Brooklyn, presented a valuable report from the Committee on Municipal Charities and Correction, of which he is Chairman. To the circulars sent out by the Committee, replies had been received only from Chicago, Brooklyn and New York. Basing conclusions on the experience of these three cities and of the States of New York and Illinois, he was prepared to say that the State took better care of its dependents than the city or county. This was because of a better classification of the subjects of care, more ample appropriations, the government of institutions, in many cases, by independent commissions, instead of city boards, the appointment to such positions of a better class of men, as a rule, and the greater freedom from debasing political influence. County or city boards generally had too much to look after, and he instanced the city of New York, where a Commission of three members have charge of the government of eighteen institutions. Although under the present Commissioners of Charities and Correction, as he was pleased to say, the administration had been greatly improved, there was an urgent demand for division of the labor and more clearly defined responsibility in this department. Considerable stress was laid in the report upon the continuous increase of dependent children in private institutions, especially in the city of New York. While the latter supported 14,000 such children, Brooklyn, because of a recent weeding out, now supported only 1,200, and it was highly desirable that this abuse should be brought to an end as quickly as possible. Nothing could be worse for the children than to be crowded in such numbers into large institutions, and nothing could be more unjust to the taxpayers of New York than to be obliged to assume the permanent care of such armies of children, without the possibility of relief in any case except as the management of each institution saw fit to grant it. The amount contributed by the city for the support of such children was two dollars a week each, and the sum had proved sufficient not only to pay all expenses of support, but to provide large sums toward the erection of new buildings every few years. There was, therefore, much reason in the suggestion that came from Illinois, that there is great temptation in the case of municipal institutions for relief to make them so far unattractive as to lead the inmates to discharge themselves.

The great vice of all municipal expenditure was that it was under the control for the most part of politicians of the baser sort, and what was needed was a higher grade of officials in municipal, charitable and correctional work, a larger degree of personal and political independence in the discharge of their duties, a more fixed tenure of office, and greater discrimination in the reception and discharge of inmates of institutions.

Perhaps the most striking paper read before the

Convention was that by the Rev. Oscar C. McCulloch, of Indianapolis, on *The Children of Ishmael; a Study in Social Degradation*. He had upon the stage a large diagram showing the social condition of thirty families through five generations, numbering in all 1,692 persons. The history of these people had been followed up for forty years, and there had been several murderers and thieves without number among them. They did not work, and as a rule lived by begging and petty thieving. Licentiousness characterized all the men and women, and large numbers of the children died young. The result was mental weakness and general incapacity for work; but this condition of affairs was met by the benevolent public with unlimited public and private aid, encouraging the vagrants in an idle and vicious life. He believed that public relief was in a large degree chargeable with the perpetuation of such stock, and what public relief failed to accomplish in this direction was supplemented by private benevolence. Out of these 1,692 persons he said he knew of but one who had risen above his surroundings and become an honorable man. The remedy which the writer indicated was to close up official outdoor relief, check private, indiscriminate benevolence or charity, falsely so called, and get hold of the children.

There were over 400 delegates in attendance, and it was decided that the Convention should be held next year at San Diego, California.

The usual summer corps of extra physicians of the Board of Health is now at work, and the service will be continued for two months, under the immediate supervision of Dr. Moreau Norris. Each physician receives \$100 a month, and is expected to be on duty eight hours a day.

This season the floating hospital of St. John's Guild is making four trips a week, instead of three, as heretofore. The Trustees of the Guild have issued a circular announcing that they have erected a new wing to the Seaside Hospital, which doubles its capacity and usefulness, and that they have improved the floating hospital by the introduction of hot and cold salt-water baths. The circular also quotes a letter from President Bayles, of the Board of Health, in which he states that it is the experience of the medical inspectors of the Board that nothing in the way of organized charity does so much as St. John's Guild to protect infant life in New York from the dangers which beset it during the warm weather. During the fourteen years that the floating and seaside hospitals of the Guild have been in existence some 350,000 poor children and mothers have received their benefits. Last year 23,970 children and mothers were taken out, and of this number 16,000 were left at the Seaside Hospital. Dr. Robert H. Green, assisted by two Board of Health physicians and two regular assistants of his own, has charge of the floating hospital.

At the last meeting of the Academy of Medicine for the season there was a social reunion and collocation, and at that of the New York County Medical Association, a discussion on "The Natural Mechanism of the Expulsion of the Placenta, and the Proper Management of the Placental Period," by Drs. Harrison, Lusk, Shrady, Dudley and others.

P. B. P.

"Sioux Midwifery in Chicago." A Reply.

Dear Sir:—The dignity of a journal like THE JOURNAL requires impartiality towards every member of the Association, and a little reserve in the condemnation of professional opinions based on observation. They may not be in accordance with the ideas of the editors of THE JOURNAL, or the current methods of leading members of the profession. Is it a crime to have independent notions? Every honest endeavor to find a truth is honorable. To find what is best for suffering humanity must be the aim of our profession, not the glory of individuals. We may all err sometimes in striving to accomplish our aims. Erring is a human attribute—infallible only the Pope. I am willing to admit that I have been mistaken all these years, if THE JOURNAL convinces me that women have come to grief under my management. Let THE JOURNAL prove that my patients thought themselves cruelly maltreated. If so, why should they have employed me again? My experience tells me that other women did not in the least do better than my patients.

THE JOURNAL calls my method a relic of barbarism. Why? Because I have been using my hands to complete the work in one minute which nature might *perhaps* have accomplished in five or ten days—*perhaps* not in so many weeks. Why does the surgeon take off a frozen or a necrotic limb? Why doesn't he wait until nature accomplishes this? Because experience has taught him the sooner dead tissue is detached from the living the better for the whole organism. Should not the same hold good for parturient women? THE JOURNAL speaks of the fearful danger of septic infection. Roemer, of Berlin, says that in both the non-interfering methods the ratio of puerperal sepsis was about the same. Ahlfeld's method gave an increase of post-partum hæmorrhage. I have claimed, and can prove it, that I lost in all my obstetrical practice only three cases from *any* cause. Should I not be entitled to draw conclusions and say whatever there is to be said to defend my standpoint? Speaking of air embolism; that I should not have seen one single case! How should they happen? The firm and speedy contraction of the muscular structure of the organ, induced by gentle manipulation in and outside of the uterus, until it drives the hand out, is the surest prevention of such a horrible accident. THE JOURNAL ridicules my expression about knowing

the pelvic organs of my patients as well as I know their faces. I hope surgeons, and especially obstetricians, will admit that a *well educated hand* is a pretty good substitute for the eyes.

The large numbers of lying-in houses do not impress themselves upon my mind favorably. There is no control over the condition of the women after they are discharged on the tenth or twelfth day post-partum. It is different in private practice. The patient is seen time and again for months or years. One hundred well observed cases in private practice are worth thousands of hospital statistics. We are in the age of numerous statistics. They certainly are valuable, and I am far from underestimating the precious work done by these gentlemen. But for all of it, I must have the right to gain my own conviction from what I experience. Possibly my method is as old as the world. There have been observing, independent, thinking people in all ages, in all nations. Logical conclusion from effect to cause has been the guide for clear thinkers of all ages. Empiricism has been the mother of all wisdom on earth. It is not twenty-five years since chemistry attempted to reverse this order of things, by establishing and fixing the laws of molecular changes, and then by analogy could say, such a stuff will act like those, because they belong to the same molecular composition. But even then it has to be proved how the substance would act in the living organism. We know of a very few drugs what rôle they play in the organism. What we know is from observation and empiricism. To know what we are doing when we administer to suffering humanity should be our aim.

To gain the best possible knowledge of our patient's body (and spirit) is compulsory. This is carried so far as to open the cavities of the human body—explorative; and then, in the face of this fact, should it be called a crime to explore the cavity of a widely dilated parturient uterus?

From the tenor of THE JOURNAL critic I expect nothing less than to be put on trial for heresy, and sentenced to—capital punishment, in the nineteenth century, by a tribunal of inquisitors, for having an opinion of my own. Yours very respectfully,

ROSA H. ENGERT, M.D.

August 8, 1888.

Acute Rheumatism in an Infant.

Dear Sir:—On reading the report of a case of acute rheumatism in an infant reported in THE JOURNAL, vol. x, No. 24, by Alex. Guthrie, M.D., of Cairo, Ill., I was forcibly reminded of two cases occurring in my own practice of recent date.

I was summoned to see the infant son of Mr. R. W., who was only 2 weeks old, with the statement that the child would cry upon the slightest movement. I found the temperature above nor-

and the consequent expenditure, the plaintiff sought relief; but the jury found for the defendant, on the ground that he had been as much deceived by the builder as the plaintiff, and that there had been no fraudulent misrepresentation. The Divisional Court refused a new trial, and this refusal has been confirmed by the Court of Appeal, mainly on the ground that there had evidently been no wilful deception on the part of the defendant. The case is instructive, as showing the limit of responsibility as regards persons selling or letting houses in the present state of the law, and as indicating the desirability, on the part of persons buying or leasing house property, of ascertaining the circumstances of the property before purchase. *Law Times*, August 4, 1888.

ing following laceration, and it was suggested that Mr. Walker's treatment was not altogether what it should have been. Although the coroner said he hardly thought the case was one to go to trial, the jury returned a verdict of manslaughter against Mr. Walker, and he would have been arrested the same evening, but on the police visiting his residence they could get no intelligence of his whereabouts.—*London Hospital Gazette*.

SUCCI'S LIQUID, upon which the faster supported himself during his fasts, is composed, according to Professor Luciani, of opium, cannabis indica, morphine, chloroform, essence of peppermint, and licorice. Succi took about 90 minims daily.

DRAINAGE OF SUMMER RESORTS on Long Island, according to Dr. Cyrus Edson, is most unsatisfactory. He states that the water of the east end of the island is generally more or less contaminated from lack of drainage.

THE LIABILITY TO SCARLET FEVER, according to an analysis of 6,000 cases, is very slight during early infancy reaches the maximum about the fourth or fifth year and then constantly diminishes.

CHOLERA VACCINE AGAIN.—On August 20 Pasteur read before the Académie des Sciences a letter from Dr. Canalis of Odessa, announcing the discovery of cholera vaccine.

THE MILWAUKEE GARBAGE CREMATORY, it is said, has been a source of annoyance on account of the smells arising from it. The contract expired on August 18.

NEBRASKA is to have a State Board of Health, if the Legislature will pass the bill adopted by the State Medical Society.

THE RECORDS OF VITAL STATISTICS in New York will hereafter be printed and open to public inspection.

Official List of Changes in the Medical Corps of the U. S. Army for the Week Ending August 18, 1888.

Surgeon N. M. Fereber, detached from the "Franklin," and to the hospital, Norfolk, Va.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending August 13, 1888.

Surgeon George Purviance, granted leave of absence for thirty days. August 13, 1888.

Surgeon H. W. Sawtelle, detailed as member of Board to select site for quarantine station at San Diego, Cal. August 6, 1888.

Surgeon C. B. Goldsborough, granted leave of absence for thirty days. August 10, 1888.

Physician George John Gutiérrez, to proceed to Sanford and Jacksonville, Fla., and Way Cross and DuPont, Ga., on special duty. August 1, 6, 9, 10, 1888.

P. A. Surgeon C. E. Banks, granted leave of absence for four days. August 6, 9, 1888.

P. A. Surgeon C. T. Peckham, granted leave of absence for thirty days. August 10, 1888.

P. A. Surgeon F. M. Urquhart, to proceed to Way Cross, Ga., on special duty. August 9, 1888.

P. A. Surgeon A. H. Glennan, detailed as member of Board to select site for quarantine station at Port Townsend, Wash. August 6, 1888.

P. A. Surgeon Eugene Wasdin, detailed as member of Board to select site for quarantine station at Key West, Fla. Aug. 6, 1888.

P. A. Surgeon L. L. Williams, granted leave of absence for fifteen days on account of sickness. August 10, 1888.

Asst. Surgeon J. B. Stoner, to proceed to Norfolk, Va., for temporary duty. August 9, 1888.

THE PREVALENCE OF SUICIDE, the statistics of suicide in France, which have just been published, show the general prevalence of self-destruction. The total for the last twelve months was 1,377, the fifth of the century being in and around Paris. It is remarkable that poverty has only caused 483 suicides in all France, and this figure includes a morbid fear of impending misery without actual privation; 1,975 cases may be traced to mental aberration and 1,228 to physical suffering. Among the moral causes domestic trouble stands first and alcoholism next. There are 200 cases of disappointed love and only 27 from jealousy, dislike of military service giving 25. The suicidal month of the year is July, and it is worth noting that suicides have increased since the establishment of the fête on the 14th.—*Pull Mall Gazette*.

MR. W. WALKER, surgeon of Willington, Co. Durham, finds himself in a very unpleasant position through the untoward death of one of his patients in child-bed. According to independent medical evidence given at the coroner's inquest, death was the result of blood poison-

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, SEPTEMBER 1, 1888.

No. 9.

ORIGINAL ARTICLES.

NOTE ON THE OCCASIONAL RELATION OF ENDOMETRITIS GRAVIDARUM TO THE PERNICIOUS VOMIT- ING OF PREGNANCY.

*Read in the Section on Obstetrics at the Thirty-ninth Annual Meeting
of the American Medical Association, Cincinnati, Ohio,
May, 1888.*

BY W. W. JAGGARD, M.D.,

PROFESSOR OF OBSTETRICS, CHICAGO MEDICAL COLLEGE, AND
OBSTETRICIAN TO MERCY HOSPITAL.

Chronic decidual endometritis plays an important rôle in the modern pathology of pregnancy. Routh, Olshausen, Schroeder, Virchow, Carl Ruge, Küstner, Klotz, Donat, J. Veit, and others have abundantly demonstrated by numerous and exact researches the clinical moment of this factor in the diseases incident to gestation. J. Veit is of the opinion that the expression, endometritis decidua, or decidualis, is not especially happy, since the morbid state is referable to a condition in existence prior to pregnancy, and persisting afterward. He prefers, with reason, the term endometritis gravidarum.

The purpose of this note is to report a case of endometritis gravidarum, that illustrates the highly probable causal nexus sometimes existing between this condition and the pernicious vomiting of pregnancy, and the occasional occurrence of indications for the induction of abortion. While there are valid objections to the custom of reporting single cases, still examples of rare morbid conditions are always of sufficient interest to warrant the infraction of an excellent general rule. The case to which I beg to call your attention is typical, and selected from a number, but it is the only one in which it was possible to establish fully the clinical diagnosis by anatomical proof.

Case.—Mrs. D., 29 years old, born in the United States, of Irish parents, of medium stature, slight build, nervous temperament; married March 1, 1879. November 10, 1879, Dr. Charles Gilman Smith delivered her of an abortive ovum, corresponding to the third month. Following the miscarriage, the patient complained of constant back

ache and leucorrhœa. She gave birth at term to living children in 1881, 1882, and 1884. Irregular uterine hæmorrhages during the first half of each of these pregnancies were noted. The quantity of blood lost was small, not sufficient to confine the patient to her bed, nor to require medical attention. The hæmorrhages were erroneously interpreted as menstruation persisting in pregnancy.

January, 1885, she was delivered by Dr. Addison H. Foster of an abortive ovum, corresponding in size and development to the third month, while the duration of amenorrhœa, and presumably of pregnancy, was seven months. The egg presented the familiar appearance of the fleshy mole. It was covered with a thick, rough membrane, composed of the decidua vera and reflexa, and the mass was penetrated by numerous old, discolored blood clots. The amniotic cavity was contracted, compressed, pushed to one side away from the decidua serotina, but contained the embryo, together with a small quantity of liquor amnii. During the early months of this pregnancy irregular, bloody discharges from the uterus were observed.

During her sixth pregnancy slight uterine hæmorrhages took place at irregular intervals, but she was delivered at term, November 12, 1886, of a living child. The infant died two months later of cholera infantum.

Dr. Foster saw the patient February 10, 1887. She was despondent over the death of the babe, and her general health was impaired. Examination of the pelvic viscera revealed subinvolution of the uterus, a slight bi-lateral tear of the vaginal portion with erosions, but without ectropion, endo-cervicitis, and endometritis. Under appropriate treatment she improved rapidly.

Date of last menstruation February 26, 1887. While visiting her mother on the South Side, August 3, a bloody discharge from the uterus occurred suddenly, without pains, and in the entire absence of any apparent, adequate cause. Inter-mittent, bloody, uterine discharges, sufficient to saturate from six to eight napkins daily, continued despite the excellent treatment of Dr. John Guerin, who ordered rest in the horizontal position, and the exhibition of opiates. Upon one occasion the hæmorrhage was of a bright arterial

hue, coagulable, and about one-half pint in quantity. Dr. Foster subsequently saw the case, and recommended the exhibition *per os* of acetate of lead and gallic acid, but the change in treatment was followed by no alteration in the symptoms, the discharge of bloody fluid continuing, and the patient growing rapidly weaker. Three days after the beginning of the discharge she complained of nausea, followed by vomiting, spontaneously, and upon taking food. The vomiting soon assumed an incoercible type, and the stomach refused to tolerate either fluids or solids. In each of her former pregnancies morning sickness was notably absent. The vomit consisted successively of food, glairy mucus, bile, and finally traces of blood. The violent efforts at retching were especially distressing, and the consequent loss of sleep rendered the patient nervous and irritable.

August 12th I was invited to see the case in consultation with Dr. Foster. The patient was greatly emaciated, weak, and the slightest muscular exertion was sufficient to excite a paroxysm of vomiting and retching. Temperature, 101° F.; pulse 120, small and compressible. Abdominal palpation revealed pregnancy advanced to about the twentieth week, the fœtus presenting by the vertex. Fœtal heart-tones, normal as to force and frequency. Intermittent uterine contractions were unusually forcible and frequent, but were painless. Vaginal exploration showed the head, completely filling out the lower uterine segment, at the inlet, the vaginal portion of relatively normal form, consistence and appearance. The tear was very slight, scarcely noticeable; no ectropion nor erosions. The cervical canal was closed, but readily passable by the finger up to the head, covered by the membranes, a distance of 3.5 centimetres. The uterine discharge was sero-sanguinolent, occasionally containing shreds of tissue, and without odor. The urine was normal.

Diagnosis.—Placenta prævia, to which the sudden, painless character of the bloody discharges and the absence of any apparent, adequate cause pointed, could be definitively excluded by the relation of the head to the lower uterine segment already mentioned.

Premature separation of the normally implanted after-birth was capable of highly probable exclusion, since the fœtal heart-tones were normal as to force and frequency, and the characters of the uterine tumor were natural. The subsequent examination of the placenta demonstrated this opinion to have been correct.

Threatened abortion from rupture of the amnion was eliminated by the entire absence of expulsive uterine contractions and of the cervical changes, softening and dilatation, notwithstanding the persistence of the discharge for longer than one week. During the progress of the abortion artificially induced at a later period, the amnion was

observed to be intact, and upon subsequent examination only a single aperture, through which the fœtus passed, was discovered.

No evidence of the hæmorrhagic diathesis could be gathered, neither from the symptoms nor the history of the case. The presence of some inflammatory affection of the endometrium was thus rendered highly probable by the exclusion of all other chief factors capable of producing the symptoms. But positive data supporting this view were not wanting. The history of the case established the fact of an endometritis corporis of long standing, and active immediately before conception. The discharges were sero-sanguinolent, with minute blood-clots of various ages, and sometimes shreds of decidua. Then the irregular, intermittent character of these discharges favored this opinion. The type of inflammation seemed to be chronic catarrhal, and the diagnosis of hydrorrhœa gravidarum (Chassinat, C. Braun, C. Hennig, Hegar) was accordingly suggested.

I was disposed to regard the vomiting as reflex, and the inflammation of the endometrium as the exciting, peripheral irritant, in the entire absence of any other plausible or adequate explanation. The anæmia was neither so profound nor so acute as to constitute a sufficient cause. Then the vomiting ceased at once upon the termination of pregnancy. Moreover, to attribute the hyperæmia to cerebral anæmia is only to make a slight alteration in the immediate pathology, and the endometritis still remains as the first cause.

The quantity of opium exhibited from first to last was relatively small, and the vomiting continued long after the discontinuance and complete elimination of the drug.

The subject of diagnosis has been discussed at some length for the reason that sufficient attention is not usually given to the differentiation between uncontrollable vomiting in pregnancy, but sustaining no necessary relation to that state, and the form of the disorder incident to gestation. Guéniot pertinently insists upon three elements in the diagnosis, that it is necessary to bear clearly and distinctly in mind. These elements are: (1) The diagnosis of pregnancy; (2) the diagnosis of the determining or adjuvant cause of the vomiting; (3) the differential diagnosis between the obstinate vomiting due to pregnancy, and obstinate vomiting due to other causes, entirely independent of pregnancy.

It is well known that German observers see very few fatal cases of the so-called uncontrollable vomiting of pregnancy, while American, English and French clinicians record very numerous examples. It is also a fact that the diagnostic criteria of the latter class of observers, as shown in the literature of the subject, are often very far from being either numerous or exact. I hope to be pardoned for this digression, but I speak feelingly on the subject. Only a few months

since a fatal case of alleged uncontrollable vomiting of pregnancy came under my observation, in which the first element in the diagnosis, the fact of pregnancy, had not been demonstrated.

Treatment.—After free evacuation of the intestinal tract, absolute rest in bed in the horizontal position, isolation of the patient, and freedom from all extraordinary sensory excitants were secured. Small quantities of peptonized milk, at long intervals, and dry champagne, were exhibited, only to be rejected as soon as swallowed. Cocaine *per os*, morphine and atropine hypodermically were apparently without effect.

Then absolute stomach-rest was maintained, and nutrient enemata were exhibited. At the same time full doses of chloral and potassium bromide (thirty grains of the former to sixty grains of the latter) were administered every eight hours per rectum. The viscus proved tolerant, and all the food and medicine, exhibited per anum, were retained. This plan of treatment was persisted in for the four days following.

At the expiration of the first week, under my care, the patient was decidedly worse. The hyperemesis and uterine discharge continued without abatement. The patient was so weak that she could scarcely lift her head from the pillow. She was evidently in a critical state. Temperature slightly subnormal, pulse 120.

I did not make the application of a ten per centum solution of argentic nitrate to the vaginal portion, as suggested and practiced many years since by M. O. Jones, of Chicago. The omission was due to the fact that I was unable to recognize any serious morbid state of the vaginal portion. I now regret this omission. The method is a most valuable means of treatment. It has been generalized by Sims, Carl Braun, Welpner and others, and is at the present time extensively practiced as an efficient routine procedure, although of course largely empirical. In my own hands the plan has commonly yielded excellent results.

Copeman's method of cervical dilatation was accidentally employed in the exclusion of placenta prævia. The index finger was passed through the canal of the softened vaginal portion up to the head, covered by the membranes, with extreme ease, but without the slightest effect upon the vomiting.

I was very reluctant to interrupt pregnancy, because the force and frequency of the foetal heart-tones were perfectly normal, and because I had never encountered a case of the pernicious vomiting of pregnancy, in which the therapy just outlined was not sufficient at least to palliate the symptom until its spontaneous disappearance. But the critical state of the patient, and the continuance of the uterine discharge, did not seem to me to justify further expectancy, so, on August 19th, with the advice and consent of Dr. Foster,

I determined to induce abortion under the two-fold indication of the vomiting and the endometritis.

After thorough cleansing and disinfection of the vagina and lower half of the cervical canal, a sterilized, flexible bougie, No. 17, French scale, was introduced between the chorion and the anterior uterine wall, to its full length. The objection has been urged against this method of the induction of abortion and premature labor (Krause's), that dangerous hæmorrhage is liable to occur from detachment of the placenta.

Ahlfeld,² however, has shown that this accident is apt to take place only when the after-birth is implanted near the os internum, while Leopold³ points out certain anatomical characters by which the placental site may be recognized and avoided in many cases. It is possible, with a little practice, to palpate the tubes through the abdominal parietes, throughout their course, in very many, probably the majority of cases. When the placenta is implanted against the anterior uterine wall this region is uncommonly protuberant, while the tubes may be followed from their origin in the median line of the fundus downward and backward. In posterior insertions of the after-birth, the tubes apparently take their origin at a point nearer to the front, and pursue a course downward and forward, while there is absence of any unusual protrusion of the anterior uterine wall.

Schauta⁴ has suggested an excellent plan to prevent the entrance of air along with the bougie into the cavum uteri. He recommends the introduction of the instrument through a speculum partly filled with fluid, so that the vaginal portion is completely covered with a thin layer.

Two hours after the bougie was placed labor pains began, and the bag of waters formed. Eight hours later the amnion ruptured, and a living foetus, together with the bougie, were expelled. The foetus moved its limbs, but soon expired. Body-weight, 205 grams; length, 27 centimetres. Its head was covered with hair, and the body with lanugo. These characters indicated a probable age of five months.

The placenta, expelled by Credé's method, was of normal size, shape and implantation, so far as the latter fact may be inferred from the site of the single perforation in the amnion, through which the foetus passed. The maternal portion of the placenta was of fresh appearance, covered with the superficial, cellular layer of the decidua serotina, in the form of a grayish-white membrane. The surface was entirely free from old blood-clots, and was probably adherent in a natural fashion to its uterine site until the rupture of the amnion. Microscopical examination revealed perfectly normal tissue.

² *Berichte und Arbeiten*, Bd. II, p. 106.

³ *Der Kaiserschnitt*, etc., p. 27, Stuttgart, 1888.

⁴ *Grundriss d. Operativen Gubertshilfe*, p. 53, Wien, 1885.

The chorion læve, however, was covered all over with shreds of tissue, apparently of decidua origin, and thin laminated blood-clots. These clots were of various ages, some old and discolored, showing resorption changes, others of recent date.

Dr. Bayard Holmes examined these shreds of decidua under the microscope. His report of the pathological condition in the case under discussion is so nearly identical with Hegar's⁵ description of *hydrorrhœa gravidarum* that I substitute the latter.

"The anatomical basis is a hypertrophic development of the uterine mucous membrane, accompanied by hyperæmia, and abundance of vessels which extends itself, not alone in the interstitial tissue, but also, according to my examinations, to the glandular bodies. There is present a lively process of new cell formation, and the separate tissue parts and tissue elements possess an unusual strength and cultivation. Particularly did I find the glands in such number and size as I have indeed rarely seen them in the first months of pregnancy. One remarked therewith much less of degenerating metamorphosis of the decidua than is otherwise the case at the eighth month. May we now describe the process as a chronic inflammation, or may we prefer to speak of it as simply a hypertrophic condition of the uterine mucous membrane? Assuredly is it that the principal symptom of the *hydrorrhœa*—the increased secretion of the mucosa—finds a perfectly adequate explanation in the anatomical discoveries. The secretion is furnished preëminently by the glands."

Following the evacuation of the *cavum uteri*, the patient fell into a refreshing sleep. When she awoke the next morning she complained of hunger, and retained all the food she was permitted to consume. Nausea and vomiting had ceased suddenly, not to recur. The temperature returned to the normal, and the heart's action gradually became slower and more forcible.

From time to time shreds of thickened decidua were expelled, but the lochial discharge was normal in quantity. Involution was uncommonly rapid and complete for the period of time. The patient left her bed on the fourteenth day after the abortion, and soon after resumed her domestic duties. She was informed that subsequent treatment would probably be necessary, as it was not likely the endometritis would terminate spontaneously in resolution. I saw her in the following November, when she appeared remarkably well. It was recommended to her that she should consult Dr. Foster with reference to her former condition. In a letter dated January 14, 1888, Dr. Foster writes: "A considerable degree of subinvolution is present; the cervix, engorged, large, pouting, red, emitting light-colored glairy

discharges, blood following the gentle introduction of a soft rubber probe into the uterine cavity." In an inveterate case of this character, after failure of less heroic measures, the mechanical removal by curettement of the diseased mucous membrane deserves consideration. Martin, Düvelins, Benicke, J. Veit and others have shown that after cure a new endometrium of relatively normal functional activity is formed.

The notion that endometritis gravidarum is an occasional determining cause of pernicious vomiting is by no means new. Dance and Chomel have described certain morbid states of the placenta and membranes, that they regard as important etiological factors. Ebele⁶ has asserted his belief in this causal relation before the Obstetrical and Gynecological Society of Berlin. J. Veit⁶ has recently reported three cases, in which a necessary relation between the two conditions is apparent, although the evidence is far from being demonstrative.

The history of the first case disclosed uncontrollable vomiting, and unbearable gastralgia in a former pregnancy, followed by spontaneous abortion. The gastric symptoms recurring in a subsequent pregnancy, the egg, showing morbid changes in the decidua vera, was artificially removed. In the second case uncontrollable vomiting was accompanied by severe uterine hæmorrhage, indicating the use of the tampon. The ovum, artificially removed, revealed characteristic alterations in the decidua serotina. The third ovum, removed on account of vomiting, was a typical example of glandular degeneration of the decidua serotina and vera. Veit's argument is briefly: (1) Changes in the decidua constituted the only appreciable, coarse lesions in connection with the genitalia in these three cases, and there was no other apparent cause present; (2) vomiting ceased immediately upon the removal of the ovum, and the elimination of the endometritis. Of course, it cannot be denied that when the uterine cavity is emptied other potential etiological factors are also rendered inoperative; (3) it is a well-known fact that gastric disorders, reflex in origin, are common symptoms of endometritis in non-pregnant women.

In the case described in this note an important link in the chain of evidence is supplied. The vomiting was aggravated *pari passu* with the advance of the inflammation of the endometrium. The fact, that vomiting did not occur in former pregnancies in this case, and that, in general, vomiting is an infrequent symptom of *hydrorrhœa gravidarum* do not constitute valid objections to the theory for obvious reasons.

The case is furthermore of interest on account of the late period of the occurrence of the vomiting. The symptom appearing for the first time as late as the sixteenth or eighteenth week, after

⁵ Monatschrift f. Geburtskunde u. Frauenkrankheiten. 1863.

⁶ Loc. cit., p. 643.

the corpus uteri had passed up into the abdominal cavity, could plainly sustain no relation whatever to any form of flexion or displacement.

Nor is the artificial induction of abortion, under the indication of endometritis, in the entire absence of such a complication as vomiting, an unfamiliar, although, of course, an uncommon procedure. J. Veit⁷ records two cases, in which the operation was considered under this indication in the absence of all others. In the one case the operation was performed, in the other spontaneous abortion occurred.

When the pernicious vomiting of pregnancy is symptomatic of endometritis, the induction of abortion would naturally be considered earlier and with greater favor than when the disorder is the result of other causes. Schreder has repeatedly emphasized the folly of preventive treatment of threatened abortion, when there is reason to believe the embryo is dead, or that the ovum is hopelessly diseased; not, indeed, advising the active interruption of pregnancy, but warning against the useless protraction of the state of pregnancy by rest in bed and opiates. When the embryo is dead, or the ovum hopelessly diseased, abortion is physiological.

2330 Indiana Avenue.

DR. H. O. MARCY, of Boston, was interested in the subject of the paper, since it placed an old topic in a new light. He had studied carefully a number of cases since familiar with the views of the late Professor Ercolani, and found, as he believes, in them the real explanation of the pathological conditions. Soon after impregnation the uterine glands become greatly hypertrophied, and furnish a secretion of physiological necessity to the developing ovum. Normally, however, these undergo atrophy as the decidua serotina develops into the true placental structures. Traces of these may be seen in the decidua vera even at delivery.

In the conditions described in the paper as endometritis hydrorrhœa gravidarum, this atrophy of the glands does not take place, but, on the contrary, hypertrophy ensues, and secretion from these enlarged utricular glands takes place, giving rise to the name hydrorrhœa, with a proliferation of the connective tissue, stroma, etc. Often, *pari passu*, these fail to develop the maternal secretory villi, either in a part or over the whole placental site, and the fœtus either undergoes an imperfect development, or perishes for want of nutrition; and if the case is an extreme one, there is produced the condition known as mole pregnancy. As the changes go on, according to the varying states of placental development in the maternal glandular organ, the result becomes greatly varied, both as to the uterus and contents, as well as to the danger to the mother.

If this explanation is correct, it simplifies greatly the problem of treatment, and if the diagnosis has been correctly made, as just differentiated by Dr. Nelson, of Chicago, shows the utter futility of cervical applications or dilatation. The blighted ovum must be removed, and the uterine mucosa regenerated. This is usually better done as a surgical rather than as an obstetrical operation. Prompt recognition of these conditions will save many lives, and when it becomes accepted that the fœtus can hardly be carried to a self-sustaining individual life, no longer will the profession hesitate to endanger, by waiting to extremis, the mother; and, as in the case of the Catholic, the clergy will not intervene under the teaching that the life to come, *i. e.*, the developing child, is of greater value than that which is, the life of the mother. Dr. Marcy closed by saying that he was still a student of these interesting changes, and would consider it a personal favor to receive specimens from any of the members for careful examination.

THE USE OF ARSENIC IN DERMATOLOGY.

Read in the Section on Dermatology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY B. MERRIL RICKETS, M.D.,
OF CINCINNATI, OHIO.

There has been of late years a very great improvement in the manner of obtaining favorable results in the treatment of cutaneous diseases with the various forms of arsenic. This, perhaps, may be ascribed to technicalities which I think may be classed as circumstantial.

The use of the drug has been periodical, at times occupying one of the most prominent positions of any in the treatment of skin diseases; again at other times it has been condemned, and like many remedies has been handed down to a time when it is more appreciated than ever, not only in Dermatology, but in general practice.

Many times competent experimenters have made efforts to have its use abandoned, or at least to give it a very narrow limit indeed, but again and again it has asserted itself to be the sheet anchor in skin affections characterized by scabiness, such as is found in psoriasis, squamous eczema, impetigo, pemphigus and some of the eruptions due to ganglionic lesions of the nerve.

Like the different generations of people watching the rise and fall of the Roman Empire, the older members of our profession have witnessed the various changes the use of arsenic has undergone during the past half-century or more. While its use has been general, its abuses have been known to but few of the more careful observers, as but few have the time, and still fewer the opportunity and inclination to make the necessary observa-

⁷ Zeitschrift f. Geburtshülfe u. Gynäkologie, XIII Band, 1886, p. 388.

tions to arrive at definite conclusions with reference to its use.

For centuries the Hindoos prescribed it for scaly affections, although it was not known by whom it was first recommended in this class of diseases. However, it is known that Adair, of France, used it as early as 1783, followed by Drs. Martin, Potter, and Otto, of the United States, 1796-1804. Sometime after this Drs. Girdlestone, Willan and Bateman, of England, corroborated the views of these gentlemen, adding that it was the best remedy in the treatment of lepra and psoriasis. We have but few remedies that are more generally prescribed, and I will add, a still less number that will give better results if limited to certain diseases, such as I have mentioned.

How often we hear it said that the results are unfavorable; that there is no special time for its administration, or disease for which it is indicated! Arsenic being inert in its metallic state, prevents it from being used internally, consequently it must be some one or more of its compounds upon which we must depend for constitutional effects.

While the administration of arsenious acid is more dangerous and its effects more difficult to regulate, I cannot feel but that it is the most certain remedy under all circumstances that we have among the arsenious compounds. There is a uniformity in its strength, as in all crystalline substances, and more especially in solutions immediately prepared therefrom, which cannot be found in the various pharmaceutical preparations.

Some of the liquors are many years old before they are administered and in many instances, no doubt, during this time have been subjected to injurious temperatures, rays of light, or other degenerative influences, or perhaps have been diluted for mercenary or other purposes. Under these conditions we are deceived in administering it, either by giving an overdose, a diluted article, or one entirely different from what is intended.

Especially is this so with the various forms of liquors, a drop of either one of which may be made, by evaporation alone, to represent twice or thrice the amount intended to be given. Thus it is that I have never been satisfied with the administration of the drug in either of these forms, and have resorted to the use of a freshly prepared solution by combining the arsenious acid with distilled water, adding a few drops of hydrochloric acid to hold it in solution.

Arsenic in water alone is not very soluble, being only about 1 to 500, but if the solution be carried to a boiling point and allowed to cool, it is found to be somewhat more soluble, about 1 to 425. When boiling continuously for three or four hours and allowed to cool slowly 1 ounce of water may be made to hold in solution grs. xijss. This increased solubility is supposed to be due to the conversion of the opaque or crystalline variety of the acid which always composes the powder into

the vitreous modification, which is more soluble in water. The opaque form attains the same solubility as the transparent by prolonged ebullition, otherwise the latter is the more soluble, but lessened by pulverization.

In the stomach arsenic may combine with the chlorides to form an arsenious acid in sufficient quantity to produce poisonous effects, consequently great care should be taken that they should not be given during the course of an arsenical treatment.

I generally give to an adult from $\frac{1}{8}$ to $\frac{1}{4}$ of a grain of arsenious acid after each meal, followed by 6 or 8 ounces of water. There are times, especially in psoriasis and the bullous eruptions, that it or the iodide given in conjunction with the iodide of potassium seems to be more beneficial than when given alone.

It is known that alkaline solutions readily dissolve arsenious acid, forming alkaline arsenites, the solutions of which are more capable of dissolving arsenious acid than water, and at the same time deposit it in crystals on cooling. In this way when combined with solutions of potash prismatic crystals of arsenious acid are deposited. Thus it is that it should be combined with hydrochloric acid, alkalies or their carbonates.

It is slightly soluble in glycerine, which is seldom used for that reason.

The combination of arsenious acid with black pepper is a decided improvement, as the amount of gastric secretion is increased, thereby making more perfect the process of digestion, hastening and making more general the absorption of the remedy. For some time opium has been combined, to check excessive peristalsis and inconvenience caused by either the pepper or arsenic, however, more likely to be due to the former than the latter. Hebra, I believe, being the first to employ and suggest this combination. That the original Asiatic pill, *acidi arsenici* gr. $\frac{1}{2}$ and *piper nigrum* gr. iv, contained an excess of pepper, there can be no doubt, especially when it was necessary to increase to any great degree the amount of arsenic.

In some cases of psoriasis I have found it necessary to increase the amount of arsenic to $\frac{3}{4}$ of a grain daily, which given in the original Asiatic pill would increase the amount of pepper to 1 drachm, enough to cause a burning sensation in the stomach, nausea, vomiting, diarrhoea, and tenesmus. With this condition of the alimentary tract it would not be advisable to give the drug as there would be no likelihood of its being assimilated with any regularity, but on the other hand might accumulate in the stomach or the duodenum to be absorbed later on with poisonous effects.

As a precautionary measure, it is advisable to keep the bowels moved in all cases where arsenic is being given, at least once a day, by saline cathartics.

The proportions in the more recent pill varies ; pepper from $\frac{1}{4}$ to 1 grain, opium from $\frac{1}{12}$ to $\frac{1}{4}$, and arsenious acid from $\frac{1}{12}$ to $\frac{1}{6}$ of a grain. I have not seen a person who could not begin with at least $\frac{1}{12}$ of a grain of the arsenic twice a day ; after the second day gradually increasing the dose one fraction of a grain each day, giving the pill say on the third day after dinner, on the fourth day after breakfast, and on the fifth day after supper, and so on until the maximum daily dose is reached.

As children do not tolerate opium readily, I have given the acid combined with pepperini in the proportion of $\frac{1}{80}$ to $\frac{1}{32}$ of a grain of the former, and the $\frac{1}{1000}$ of the latter for eight or ten doses, given with increased frequency. That there is an increased efficiency in giving small doses of arsenic, and these doses given more frequently, there can, I think, be no doubt.

Unfortunately, the cases amenable to arsenical treatment must receive its prolonged application, and the best way, I think, to secure this is to begin with small doses, gradually increasing in frequency until the system is thoroughly saturated, without injurious effects. If there is no marked influence manifested by this time the system should be kept under the influence for several days, providing it produces no discomfort. It is seldom necessary to wait until the limit is reached to see good results, as 95 per cent. of the cases favorably influenced by arsenic will begin to improve very early in the course of treatment.

Its influence upon psoriasis in my own hands during the past year has been most agreeable, in that the last nine cases have terminated favorably within a very short time. One of the cases, in particular, which had existed for three years and had been treated for various diseases with no improvement, found himself entirely cured after a nine weeks' course of arsenical treatment. The highest daily amount that he took during this time was $\frac{3}{4}$ of a grain of arsenious acid. He was restricted as to diet, abstaining from the use of tobacco, tea, coffee, alcoholic and malt liquors. In all the other cases there was likewise favorable results, nothing whatever being done with them except internal medication and restriction of diet.

If the results were no better than those obtained by the various local applications, such as lotions, plasters and ointments, its advantages in the great majority of cases cannot be lost sight of, in that there is no uncleanness or discomfort whatever connected with it. When it is to be administered in the form of a pill it can be carried about in the pocket without inconvenience, thereby enabling the patient to be more regular in dosing for a greater length of time than he would be under other circumstances.

The *modus operandi* of the remedy is, like that of many others, not well understood. We do know, however, that the heart's pulsations are

increased in strength and frequency, and that the system in general is stimulated, and especially is this so with the nervous system.

It is an old Austrian custom to give horses doses of arsenic just before starting out for a long journey.

If, in psoriasis, the number of cells are increased in the *stratum corneum*, the rete malpighii thickened, papillæ increased in length and breadth, the capillaries which enter them enlarged and surrounded with cells, why have we not reason to think that the beneficial results of arsenic are due to some indirect influence upon the papillæ through the nerve supplying them. With these pathological changes there is some increased blood supply. Whether or not this is the cause or the result of the cell proliferation is not definite. However, it would seem that the enlarged vessels are the cause, and *not* the result, as is supposed by many. Admitting that the former is the case, the latter can be more easily accounted for, in that the cell proliferation would more likely be due to an increased rather than a decreased blood supply. The cells would in this way mature sooner thereby, multiplying at a greater rate.

In all scaly affections the epidermis is constantly being developed and thrown off, causing in the course of time, a drying up of the external layer of cells, which become detached, in this way causing the exfoliation of different degrees.

Does it not stand to reason that a remedy such as arsenic will stimulate to a more perfect action?

The nervous system would have the desired effect by giving to the nerve trunks better control over its peripheral distribution, the effect being in this case to contract the blood-vessels, thereby diminishing the blood supply and checking the rate of cell proliferation. This, I think, is the keynote in the use of this drug, which perhaps is more capable of having this influence than any other at present known to us.

It is this influence to which I ascribe the curative effects of arsenic upon ordinary warts. In them the papillæ are hypertrophied, hence the blood supply at that point is greater, and the action of the drug diminishes this blood supply by causing the vessels to contract, thus causing these papillæ to dry up and later to fall off.

However, after a time, with some shorter and others longer, there is the opposite effect, as we find congestion of the skin in many cases after a continuous use or an overdose of arsenic. The peripheral nerves have no doubt been overstimulated, thereby rendered incapable of contracting the vessels which they control, in other words, paralyzed, so that the walls of the capillaries and arterioles are relaxed, and allowed to carry an abnormal amount of blood, in this way causing the reddened and congested appearance so often the result of the use of arsenic.

When this condition exists, as in many acute

stages of disease, without the use of arsenic, great care should be taken not to give but the smallest doses, if at all, lest the condition might be aggravated. If the irritation cannot be allayed in a reasonable time it is better in the majority of cases to postpone giving the remedy.

At first its influence in psoriasis is to exaggerate redness and make the skin more inflamed, a condition which I have recently seen in a lady who had suffered for fourteen years with this disease. There was quite an extensive eruption over the body and extremities, also over the face and head. I gave her $\frac{3}{8}$ of a grain of arsenious acid, daily for two weeks, combined with pepper and opium. Near the end of this time she complained bitterly of redness, tenderness and intense itching, all of which caused her to abandon the treatment and exhaust her energies in condemning me and my proceedings in her case, at the same time admitting that there was less scaliness than when she first consulted me. She used some patent nostrum and continued to improve. At the end of five weeks she was free from the eruption, having, she said, taken but 50 of the $\frac{1}{8}$ grain pills. There can be no argument brought to bear which will, seemingly, convince her that the remedy had any effect whatever, unless it would have been to destroy her life. As she did not return the remainder of the hundred pills, and refused to compensate me for my services, I am inclined to think that she received the internal benefit of the 100 pills first prescribed.

Penphigus is almost equally amenable to this remedy, the exudation of liquor sanguinis being as a rule diminished immediately after a few doses of arsenic have been given.

In these two diseases the illustrations are such that no doubt can hardly be expressed by those most familiar with them as to their efficacy or *modus operandi*.

Unfortunately, my experience and observation have been very limited in the use of the drug in this particular, consequently cannot speak with reference to frequent dosage. I should think, however, that we should expect the same good results as are obtained in psoriasis and other cutaneous affections.

It is not the reading of this paper alone, from which I expect to see personal or general benefit, but the discussion which I hope will follow. The sole effort has been to place the administration of this worthy drug upon a higher plane, and have those most familiar with its use express themselves freely.

DR. HOBART AMORY HARE, of Philadelphia, who, as is well known, has done a good deal of excellent work in experimental therapeutics and pharmacology, has been awarded the Fothergillian Prize of the Medical Society of London.

VAGINAL HYSTERECTOMY; THREE CASES, WITH TWO RECOVERIES.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY S. C. GORDON, M.D.,
OF PORTLAND, ME.

Within the last decade the views of the profession have almost entirely changed as to the pathology of cancer. From believing it to be but a local expression of a constitutional disease, it is now generally held to be local at first and gradually infecting the system. While the first belief existed the profession were indifferent to operative measures, and the victims of the disease shrank from any operation, which even the profession did not urge, or think offered much in way of cure or relief. If removal of the part affected was consented to it was usually too late to prevent systemic infection, and the public soon learned that a return was the rule, with very rarely an exception.

Careful pathological investigations and clinical experience gradually led to sounder views, so that now there is a general consensus of the best pathologists that if the disease is removed early and all the surrounding glands liable to be involved thoroughly extirpated, the liability to return is very much reduced, and many cases are radically cured. Obviously the sentiment of the laity has not kept pace with that of the profession, and many cases are secretly concealed until too late for radical operation. The forms of cancer that appear upon the face, lips, and parts of the body that are exposed, have generally been operated early, and we find, therefore, a very large percentage of cures—I think I do not overstate when I say that a majority of the cases of epithelioma of the lip and face that are removed never return. Statistics of operations for cancer of the mammary gland show a very marked increase in the number of recoveries over those of twenty years ago. Repeated operations for recurrences of the disease have proved of immense value in affording relief and prolonging life. Many instances are reported where the disease has apparently been arrested by extirpation of glands secondarily affected, and many years and much comfort enjoyed by the sufferers, who would have otherwise died from a loathsome and painful growth. I think no intelligent member of the profession to-day, will question that an early operation for the removal of any cancerous growth, no matter where situated, offers much the best chance to the patient.

That cancer of the uterus is no exception to this rule seems reasonable to believe. In a very large majority of all cases of cancer of this organ we find the milder form of the disease prevailing, viz., epithelioma. Whenever, in any other part of the body, we find this we consider it much more amenable to treatment (being less liable to return) than the other forms and, so far, more fa-

avorable as regards operation. The uterus should not be an exception in this respect. The chief difficulty lies in the lack (from various and obvious causes) of an early diagnosis. Women are so liable to leucorrhœa that it is only when it becomes excessive and offensive, or bloody, that they seek medical advice. In many cases too, they fear to ask lest their fear of cancer be confirmed. Add to this the dread of the knife and the sentiment, so prevalent, that operations do but little good, it is not to be wondered at that we see so many cases where the disease has advanced so far as to affect adjoining tissues. When this condition occurs but little hope remains for the radical operation.

In any given case, seen in the early stages, where the disease is confined to the cervix, there seems no valid reason for not operating by extirpation, except that of immediate mortality. Even in the present light of statistics, I feel quite sure that we are fully justified in taking all the risks. That in any disease which has a fatal tendency we are justified in resorting to any operation that offers a chance for life, I believe is a good surgical rule. Applying this rule to cancer of the uterus, we may safely assume that the disease if left to itself will surely prove fatal. Recovery from the operation of vaginal hysterectomy is certainly to-day as good as that of ovariectomy, and it is yet in its infancy. When to this we add the absolute cures now reported by Martin, Billroth and others, in Europe, and many in America, it would seem that the operation has a most brilliant future.

To my mind the superior drainage given by this operation, and the less amount of peritoneal surface exposed and wounded are the essential elements of success. The former (complete drainage) is without doubt by far the most important feature of all successful wound healing.

Believing, as I have for many years, in the doctrine of the local origin of cancer, I was ready to adopt the operation of vaginal hysterectomy whenever opportunity offered. Since the 1st of February last, I have had three such opportunities, and therefore offer as my only apology for reporting these cases, my desire to contribute to statistics now so rapidly accumulating.

Case 1.—Mrs. M., widow, aged 38, pregnant once; miscarriage at 3 months, or a little less, several years ago. The latter part of December, 1887, was taken with a sero-sanguinolent fetid discharge from the vagina, which soon became a profuse hæmorrhage, lasting two weeks. Repeated again in a week. Her physician found an epithelial growth from the posterior lip of the uterus as large as an English walnut, which bled very easily when touched. I saw her the last of January, and advised vaginal hysterectomy, to which she readily consented, after fully understanding all risks and chances for life.

The operation was made, and she made a very

rapid recovery, with no alarming symptoms at any time. Wound was entirely healed in about ten weeks, and she is now (May 1st) in perfect health, with no lack of color, so apparent at time of operation, and able to do any kind of work. She says she has not been as well for years.

Case 2.—Mrs. L., widow, aged 50, multipara. Two years ago I made double ovariectomy upon her, removing one very large cyst, and a smaller one as large as a man's fist. Six weeks before I saw her she began to have fetid serous discharges from the vagina, very profuse, and soon followed by quite large hæmorrhages. She was sent to me by Dr. Haines, of Ellsworth, Me., who suspected cancer. Examination showed epithelioma of the posterior wall of the cervix, and a narrow strip of the vagina adjoining was also involved, but from a history of very short existence with very limited area, I advised hysterectomy, to which she consented, after a full understanding of all the risks for and against.

The posterior incision was made behind the strip of vagina involved so as to include it with the uterus. I have no doubt that the disease began at the junction of the vagina and uterus. Every part of the diseased tissue was removed, so far as could be seen.

The operation was made April 2, and on May 7, she returned to her home—170 miles. She had no unfavorable symptoms from first to last, and at the end of four weeks the wound in the vagina was closed and the parts soft and in every way in good condition.

Case 3.—Mrs. —, aged 43, married, multipara. For more than a year prior to my seeing her she had had fetid, watery, purulent and bloody discharges, interspersed with some profuse hæmorrhages. When she came to me (sent by Dr. Morrison, of Bar Harbor) I found the uterus entirely movable and no portion of the vagina involved in the disease, but the cervix uteri entirely destroyed by ulceration. Her general condition was excellent, with no indication of systemic poisoning. Color good and spirits buoyant. After a full, clear understanding of the various methods of treatment which could be offered, and the hope and fears pertaining to each method, she and her husband very earnestly desired to have the operation of vaginal hysterectomy.

The patient was very stout and the vagina, naturally small, was so padded beneath the mucous membrane with fat that it was with much difficulty that I could find space for the various manipulations. Added to this, was the entire absence of any part of the cervix, by which to make traction, and an extremely large fundus uteri. It was with great trouble that I succeeded in retroverting the uterus, although the entire posterior wall of the vagina was cut across, and the cul-de-sac completely opened. I found the left broad ligament affected with the disease, but re-

moved all I possibly could, together with both ovaries and Fallopian tubes. The operation was an hour and forty minutes long as each step was very slow.

Within twenty-four hours she had a well marked peritonitis, which continued without abatement until the seventh or eighth day when she died. I tried to obtain catharsis on the third day, but was unable to move the bowels at all and there was undoubtedly obstruction as a complication. I am quite sure that under the same circumstances I should refuse to operate again, but trust to a temporary curetting and chloride of zinc.

In all three of these cases the technique of the operation was practically the same. I opened the pelvic cavity from behind close to the uterus, applied small compression forceps to bleeding points, next dividing the anterior vaginal wall at a corresponding point on the cervix, carefully separating the bladder by a scalpel handle and finger, finally completing the circle of the cervix, and then retroverting the fundus by a strong Recamier sound in the uterine canal, while my fingers and vulsellum forceps grasped the top. I then applied a Spencer Wells' forceps to each broad ligament (thus controlling all hæmorrhage), and at once dividing the ligament on each side, I removed the uterus. In two of the cases the remainder of the broad ligament was long enough to ligate with catgut (which was used in all the cases) by passing a double-threaded needle through the centre and tying each way, and double wrapping. In the other case I stitched back and forth until I secured all bleeding vessels. All forceps were then removed and the peritoneum and mucous membrane on the posterior wall were sutured together. In neither of the cases was there a spoonful of hæmorrhage after the operation.

I think I shall in future operations draw down the uterus, divide the tissues, compress all bleeding vessels, and remove without attempting to turn the uterus. I think it unnecessary labor and complication without a corresponding advantage.

My experience with these three cases confirms my former views that there is much to be gained by early removal, even were comfort to the patient alone to be considered. Of course time only can tell what they promise in the way of cure. Of course every man will operate or not as he believes or not in the theory of the local origin of cancer. That must be the crucial test. There can be no logical conclusion short of complete removal if one does hold to this theory. The application must alike be made to the uterus, mammary gland, lip, or whatever organ or part is affected. The duty of the profession lies in reforming public sentiment, so that victims of this terrible scourge to humanity may seek advice early and thus enable the profession to place this operation among the other brilliant triumphs of surgery for which the last decade is so conspicuously illustrious.

A CASE OF POISONING BY SULPHATE OF ATROPIA; RECOVERY.

Read before the Medical Society of the District of Columbia, March 28, 1888.

BY LLEWELLYN ELIOT, M.D.,

OF WASHINGTON, D. C.

Cases of poisoning by sulphate of atropia are becoming very common since the application of the drug has become better understood. Its employment in the treatment of sciatica and various neuralgic affections, the sweating of phthisis, and its application in ophthalmic practice, are of daily occurrence. It is not a drug to be given with criminal intent, as its action and effects are not sufficiently understood by the general public. Poisoning by atropia results generally from mistaking its solution for some other medicine. It has been my fortune to meet with two cases of poisoning by this agent, one of which has already been published,¹ and the other the one which is the subject of this report. Both resulted favorably, but only after severe symptoms.

Maude H., æt. 26 years, prostitute, born in New York, of good physique. Gave a previous history of rheumatism and alcoholism with its consequent exposure. She denied most positively ever having had syphilis, but admitted having had a vulvar abscess, for which she was treated in a hospital, where she was assured by the physician who attended her that she had no specific taint.

At the time she was first seen, July 20, 1887, she was suffering from an attack of rheumatism, for which she was given, *R. Potassii iodidi*, 4 gm. (3j); *aquæ destillat.*, 128 cc. (3iv). *M. Sig.* Tablespoonful four times a day. She had been under treatment for some eye affection, the nature of which I do not know, and had a vial containing *R. Atropiæ sulphat.*, 267 gm. (gr. iv); *aquæ rosar. dest.*, 32 cc. (3j). *M. Sig.* One drop in the eye three times a day. For some days she took the iodide solution with benefit.

On the 22d, for some reason no one knows, the bottle containing the atropine solution was emptied into a goblet and put upon the sideboard. The patient, thinking it was her medicine, swallowed it down in one gulp, not noticing the bitter taste, making the amount of atropia sulphate taken .267 gm. (gr. iv). This was at 9:30 P.M. In fifteen minutes she complained of a dryness of the mouth, tickling in the throat, difficulty of swallowing and hoarseness, but not enough to cause any annoyance. Very soon she became flighty, light-headed, with hallucinations and confusion of thought, headache and disordered vision; at this time the body assumed a livid redness and was very dry. She staggered in her gait and was unable to articulate clearly. These symptoms were allowed to continue, as the inmates of the house "thought it was a case of drunken hysterics," until 10:30, when I was called. At this

time her condition was alarming. The pupils were enormously dilated; there was absolute impossibility of swallowing, constriction of the throat; tongue, gums and entire mouth perfectly dry, voice very husky; violently delirious, singing, crying and fighting; pulse 140, respiration 50, temperature 98° F. Her jactitations almost amounted to convulsions and it required much force to control them. She was given a subcutaneous injection of apomorphia .0055 gm. (gr. $\frac{1}{12}$), which failed to vomit her, although it was repeated. She was then given morphia sulphate .022 gm. (gr. $\frac{1}{3}$) hypodermically. In twenty minutes, her condition remaining the same, she was given another ($\frac{1}{3}$ gr.) .022 gm.; this was repeated in thirty minutes. Following the last injection she became more quiet, the jactitations were less frequent, the delirium muttering, pulse 114, temperature 98° F., respiration 38, pupils dilated about one-half. In thirty minutes she was given another hypodermic of ($\frac{1}{3}$ gr.) .022 gm.. This made .086 gm. ($1\frac{1}{3}$ gr.) of sulph. of morphia given in 80 minutes. Respiration now became less frequent, falling to 10 in a minute and labored, the pulse continued at the rate of 96 to 114, becoming feebler, the surface still cold and dry. The pupils soon showed contraction, and the effect of the morphia became apparent in the stertorous respiration and contracted pupils. Strong coffee was given by the rectum; at the same time citrate of caffeine .067 gm. (gr. $\frac{1}{2}$) was administered hypodermically and repeated every hour until the effects showed themselves, which was at 2 o'clock, when she could be aroused by shaking, but would fall off again into a deep sleep.

It was not until 4 o'clock, seven hours after taking the poison, that I considered her out of danger. Giving directions that she be given strong coffee, with an occasional dose of citrate of caffeine, I left my patient comfortable. For some days she suffered from headache and disordered vision, was morbidly sensitive to sounds; her helplessness amounted almost to paralysis of the arms and legs. She had no recollection of what had happened from the time of taking the atropia solution until the morning of her recovery.

In the treatment of this case the large and repeated doses of sulphate of morphia may seem rash and uncalled for, and in the end requiring measures to antagonize them, but, to my mind, they were the patient's salvation.

Cases of poisoning, from whatever agent they may occur, require treatment of the most vigorous order, and it is to this same rough-shod plan of treatment, which I have always followed, that I owe my invariable successful result in all the cases of poisoning that have fallen into my hands.

In a rapid glance at the reported cases of poisoning by sulphate of atropia, we find that the toxic effects have followed the instillation of weak as well as strong solutions into the eye—Knapp²

has recorded a case following its application to the middle ear—as well as its careless administration by both attendants and pharmacists. In the last class of cases, those following the carelessness of attendants and pharmacists, I can see no extenuating circumstances.

The failure of the apomorphia to vomit in this case makes the second occasion on which it has refused to act in my hands.

Some idea as to the amount of sulphate of atropia that has caused toxic effects will be obtained from the following journal references: Newland³ reported the case of an adult who took .08375 gm. (gr. $1\frac{1}{4}$), and recovered under morphia sulphate .01675 gm. (gr. $\frac{1}{4}$) every twenty minutes, and ammon. carb. .133 gm. (gr. $\frac{1}{2}$) every ten minutes for two hours. Andrew⁴ reported an adult who recovered after taking .044 gm. (gr. $\frac{2}{3}$). Warden⁵ reported bad effects following the hypodermic injection of 5 or 6 drops of liq. atrop. sulph. (B. P.) .00268 gm., or gr. .0418. C.⁶ reported a child 3 years old who died after taking more than .033 gm. (gr. $\frac{1}{2}$), and treated with tincture of opium. Sinclair⁷ reported an adult who recovered after taking .0083 gm. (gr. $\frac{1}{8}$). Agnew⁸ reported a case of an adult who recovered, under tincture of opium, after taking .100 gm. (gr. $1\frac{1}{2}$). Holt-house⁹ reports the case of his own child, nearly 4 years old, who took .025125 gm. (gr. $\frac{3}{8}$), and recovered under ether, brandy and ammonia. Leach¹⁰ reported an adult recovering after taking about .067 gm. (gr. $\frac{1}{2}$). Chambers¹¹ reported a child, 4 years old, who recovered after taking 2 teaspoonfuls of a solution .133 gm. to 32 cc. (gr. $\frac{1}{2}$ to $\frac{3}{4}$). Chisolm¹² reported the case of a child 4 years old who experienced bad effects from .00012411 gm. (gr. $\frac{1}{8000}$). Opie¹³ reported a child 21 months old, that was given by mistake a solution containing sulph. atropia. .044 gm. (gr. $\frac{2}{3}$) with sulphate of zinc .022 gm. (gr. $\frac{1}{3}$). Severe cramps in the stomach, with rigid contraction of the abdominal muscles and retraction of the limbs, followed, but it recovered under tincture of opium. Johnston¹⁴ reported a woman recovering after taking .044 gm. (gr. $\frac{2}{3}$), under sulphate of morphia and caffeine. Prentiss¹⁵ reported a child 19 months old recovering after taking nearly .067 gm. (gr. $\frac{1}{2}$), under tincture of opium and tannic acid. Stocks¹⁶ took 6 minims of a solution .067 gm. to 8 cc. (gr. $\frac{1}{2}$ to $\frac{3}{4}$). Clark¹⁷ reported a boy who was given atropia sulph. .008 gm. (gr. $\frac{1}{8}$) instead of sulph. morphia, recovering after injections of .01675 gm. (gr. $\frac{1}{4}$) morphia sulph. Steele¹⁸ reported a case of recovery following .008 gm. (gr. $\frac{1}{8}$), under tincture of opium with brandy and water. MacKenzie¹⁹ treated an adult with repeated injections of .01675 gm. (gr. $\frac{1}{4}$) morphia sulphate, after taking about .133 gm. (gr. $\frac{1}{2}$). Murrell²⁰ treated an adult after taking about .01675 gm. (gr. $\frac{1}{4}$), with hypodermics of morphia sulphate .033 gm. (gr. $\frac{1}{2}$) every hour until he had given .133 gm. (gr. $\frac{1}{2}$).

At the same time he used carbonate of ammonia and whisky. Kuechler²¹ quotes a case of Samuelson, recovering, that had taken .022 gm. to .024 gm. (gr. $\frac{1}{3}$ to gr. $\frac{3}{8}$). Landesberg²² reported two adults recovering; one took .0067 gm. (gr. $\frac{1}{16}$) hypodermically; the other, after taking a teaspoonful of a solution of .067 gm. to 12 cc. (gr. j to 3iij). In each case morphia sulphate .01675 gm. (gr. $\frac{1}{4}$) was given. Eliot²³ reported an adult taking .033 gm. (gr. $\frac{1}{2}$), and recovering under morphia sulphate .022 gm. (gr. $\frac{1}{3}$) repeated. Seargent²⁴ reported an adult who took .033 gm. (gr. $\frac{1}{2}$), with morphia sulphate .05025 gm. (gr. $\frac{3}{4}$), was given morphia sulphate .067 gm. (gr. j) and eserine .00418 gm. (gr. $\frac{1}{8}$); this last was repeated in the dose of .0025 gm. (gr. $\frac{1}{4}$), with recovery; Knapp²⁵ reports bad symptoms following dropping 4 drops of a 1.5 per cent. solution in the ear. Flynn²⁶ reported a child 15 months old taking about a teaspoonful of a solution of .133 gm. to 32 cc. (gr. ij to 5j) treated successfully with morphia sulphate. Luff²⁶ reported a child 2 years old recovering from taking a solution containing .067 gm. (gr. j); treated with morphia acetate .011 gm. (gr. $\frac{1}{6}$) and then .01675 gm. (gr. $\frac{1}{4}$). Greenway²⁷ reported a case taking at least a teaspoonful of the B. P. solution, recovering from the poison, but died on the fourth day. Gross²⁸ reported a case proving fatal after taking .201 gm. (gr. iij), and treated with .033 gm. (gr. $\frac{1}{2}$) injections of morphia acetate and sulphate. Montgomery²⁹ saw bad effects following instillation of a solution into the eye. Wallace³⁰ reported an adult presenting bad effects following the external use of it in a liniment, the amount absorbed being .022 gm. (gr. $\frac{1}{3}$). Fitzmaurice³¹ reported a child 2 years old recovering after taking about .033 gm. (gr. $\frac{1}{2}$), treated with solution of potash and tincture of opium. Bowles³² reported bad effects from an eye-wash, .267 gm. to 32 cc. (gr. iv to 5j). Loomis³³ reported an adult recovering after taking about .067 gm. (gr. j) in solution; was given tannic acid and animal charcoal and fluid extract of calabar bean, morphia sulphate, and ammonia.

From an examination of these cases we find that out of the thirty-two cases reported only two proved fatal, the first,⁹ a child 3 years old who took more than .033 gm. (gr. $\frac{1}{2}$); the second,²⁸ a woman who died after taking .201 gm. (gr. iij). The smallest amount producing bad effects is in the case of the child reported by Chisholm,¹² where, according to his calculation, but .00012411 gm. (gr. $\frac{1}{8000}$) was taken. The next in smallness of dose is by Warden,⁵ where .00268 gm. (gr. $\frac{1}{25}$) was given hypodermically.

In treating cases of poisoning by the sulphate of atropia, the tincture of opium, the preparations of morphia, eserine, fluid extract of calabar bean, strong infusions of coffee, ammonia and brandy, with electricity, have been the measures preferred.

Morel³⁴ recommends the use of tannin and reports three cases recovering by it. The cases of Prentiss¹⁶ and Loomis³³ are the only ones in which I find mention made of its use, but Loomis used at the same time animal charcoal and fluid extract of calabar bean, to resort to morphia sulphate in the end.

Such is the result of a rapid glance at the recorded cases of atropia poisoning which I have made. Cases of helladonna poisoning are intentionally omitted, as well as those in other than the English language, as I had not time to hunt them up, and I conclude that poisoning by atropia sulphate is by no means fatal, if vigorous measures are adopted at once and persisted in until their effects are visible. In the treatment of any case of poisoning, be the amount small or excessive, the first thing for the medical man to do is to retain presence of mind, and not allow the friends and the family to interfere with him, for the moment any outside influence is brought about he thereby loses just so much.

¹ Eliot, L., Med. Record, N. Y., 1883, xxiv, p. 372.

² Knapp, H., Arch. Otolology, N. Y., 1882, xxi, p. 23.

³ Newland, T. H., St. Louis Med. and Surg. Jour., 1874, xi, p. 321.

⁴ Andrew, J., Month. J. M. S., Lond. and Edin., 1852, xiv, p. 34.

⁵ Warden, C. J., Indian Med. Gaz., Calcutta, 1879, xiv, p. 140.

⁶ C. Boston M. and S. Jour., 1869, lxxxix, p. 148.

⁷ Sinclair, A. D., Boston M. and S. Jour., 1863, lxviii, p. 171.

⁸ Agnew, D. H., Penn. Hosp. Reports, 1868, i, p. 356.

⁹ Holthouse, C., Med. Times and Gaz., Lond., 1859, xl, p. 601.

¹⁰ Leach, H., Ibid., 1865, ii, p. 34.

¹¹ Chambers, Dr., Lancet, Lond., 1864, i, p. 8.

¹² Chisholm, J. J., Balto. M. Jour., 1870, i, p. 25.

¹³ Opie, Thomas, Physician and Surg., Balto. 1872-3, i, p. 6.

¹⁴ Johnston, C., Balto. Med. Jour. and Bull., 1871, ii, p. 216.

¹⁵ Prentiss, D. W., Phila. Med. Times, 1879-80, x, p. 164.

¹⁶ Stocks, A. W., Brit. Med. Jour., Lond., 1870, i, p. 489.

¹⁷ Clark, E. A., Med. Arch., St. Louis, 1869, iii, p. 16.

¹⁸ Steele, W. S., Med. Circ., Lond., 1862, xx, p. 202.

¹⁹ Mackenzie, J. C., Cincin. Lancet and Obs., 1878, xxi, p. 148.

²⁰ Murrell, T. E., Med. and Surg. Report., Phila., 1876, xxv, p. 269.

²¹ Kuechler, M., Med. and Surg. Report., Phila., 1860, v, p. 110, from Königs-Berger Med. Jahrbücher, 1858, i, 1 and 2.

²² Landesberg, M., Med. Bull., Phila., 1881, iii, p. 11.

²³ Eliot, L., Med. Record, N. Y., 1883, xxiv, p. 372.

²⁴ Seargent, A., Louisville Med. News, 1881, xii, p. 99.

²⁵ Flynn, J. W., Med. Record, N. Y., 1882, xxi, p. 375.

²⁶ Luff, A. P., Brit. Med. Jour., Lond., 1886, ii, p. 19.

²⁷ Greenway, A. S., Brit. Med. Jour., Lond., 1878, ii, p. 516.

²⁸ Gross, S. W., Amer. Jour. Med. Sc., Phila., 1869, lviii, p. 401.

²⁹ Montgomery, W. T., Chicago Med. Jour. and Ex., 1879, xxxviii, p. 43.

³⁰ Wallace, A. W., Med. Press and Circ., Lond., 1882, xxxiv, p. 69.

³¹ Fitzmaurice, T., Lancet, London, 1881, ii, p. 414.

³² Bowles, R. L., Brit. Med. Jour., Lond., 1876, i.

³³ Loomis, H. P., Med. Record, N. Y., 1885, xxvii, p. 235.

³⁴ Morel, Annal. de Société de méd. de Gand., September, 1872 p. 181.

MODERN SURGICAL TREATMENT OF THE URETHRA.

Read before the Henderson Medico-Chirurgical Society, June 12, 1888.

BY JOHN YOUNG BROWN, M.D.,

OF HENDERSON, KY.

In no branch of surgery has improvement been more marked, within the last ten years, than in the surgery of the urinary bladder and the urethra. Therefore, I have chosen this subject to present to your society to-night, in order that I may give to you a brief review of some of the modern surgical methods of treating diseases of this tract,

and with the hope that my paper may succeed in drawing forth discussion on these important points. I shall first take up gonorrhœa, its modern pathology and antiseptic treatment, and shall illustrate to you Brewer's method of continuous irrigation, and give you my experience with it in the treatment of seventy cases of acute and chronic gonorrhœa. I shall also show you Keyes' modern instrument for deep urethral injection of nitrate of silver, and give, in so far as I am able, its uses in the treatment of urethritis. Next I shall take up the modern views in regard to stricture of the urethra, with especial reference to its pathology. I shall then, if time and space permit, briefly touch cystitis.

There is no subject, from a surgical standpoint, more important or more interesting than gonorrhœa, and in order that it may be successfully and scientifically treated, it is necessary that the surgeon thoroughly understand its ætiology and pathology. Not until recently have we been able to treat this trouble from a strictly scientific point of view, and although the present methods fall far short of ideal perfection, still no one can contrast the present with the past line of treatment without making the acknowledgment of its great superiority. In 1879 Neisser made the announcement to the world that he had discovered the specific microbe of gonorrhœa, to which he gave the name of gonococcus. He described it as "an ovoid microbe found in the the protoplasm of the pus cells, constricted in one diameter and subdivided." Since this announcement, bacteriologists, both in this country and abroad, have thoroughly investigated this subject, and, by experimental inoculations and cultivation, it has been proven that true gonorrhœa is due to the gonococcus of Neisser. In every case of gonorrhœa these microbes are uniformly present, and, by a simple method of staining, can be readily demonstrated. The time allotted to me does not permit of my going into this subject in detail, therefore I trust you will accept the simple statement of fact, for there is no longer a question of the specific nature of gonorrhœa. "Gonococci are found in the secretions of every case of gonorrhœa, and secretions that do not contain gonococci are invariably non-infectious if brought upon the urethral mucous membrane. These microbes have a peculiar invasive faculty, by which they penetrate first the superficial layers of the epithelial membrane, and gradually, by further proliferation, the sub-mucous layer. The route of their inroads is along the intercellular substance. An intense hyperæmia of the capillaries and other blood vessels along the seat of the primary infection, leads to a massive emigration of white blood corpuscles and an abundant secretion of purulent pus. The destruction of the epithelial urethral investment is often followed by the exudation of a croupous membrane, beneath which colonies of gonococci

are found. From the sub-epithelial tissue gonococci may gain entrance to the lymphatics, and through them be transported to the endocardium, joints and tendinous sheaths of muscles.

The foregoing is a brief synopsis, taken in part from Gerster's late work on "Antiseptic Surgery," of the view now held in regard to the causation of gonorrhœa. This being the state of affairs, it is evident, reasoning from cause to effect, that the change in the treatment must necessarily be radical in the extreme, and I shall now attempt to sketch the modern antiseptic treatment of this troublesome malady. During the past ten months I have had under treatment seventy cases of gonorrhœa, in all of which I have followed antiseptic teachings, and with results both gratifying to myself and to my patients. Before going into detail I will show you the Kiefer nozzle for continuous irrigation. This is attached to an ordinary fountain syringe, and with an oil lamp and water can constitute all that is necessary for the treatment of ordinary cases. The plan of retro-injection or continuous irrigation is based on the specific nature of gonorrhœa, and consists in the daily use of large quantities of medicated and tempered water. In the acute cases the plan of treatment I use is as follows: Patient is given a mild purge, and the use of intoxicating liquors is prohibited. I then commence the use of the continuous irrigation, injecting twice a day a quart or more of hot bi-chloride solution 1 in 15,000, or even milder, if urethra is hypersensitive. This is kept up for four or five days, at the end of which time the discharge is, as a rule, considerably checked. As discharge grows scant and acute stage disappears, I change the injection, using the same amount of a saturated solution of boracic acid. In the majority of acute cases this plan will prove successful. In chronic cases the plan of treatment is slightly different. In these cases I examine first for stricture, and, if examination proves negative, I either dilate the urethral canal with a large sound, or set up an acute inflammation by the use of a strong solution of zinc chloride (gr. ij to ʒj), thereby placing the urethral canal in condition for the use of retro-injection. I then begin as before, and use twice daily the bi-chloride injection, followed by the boracic acid irrigation. Following this plan of treatment, I have succeeded in curing the major portion of my cases, and I have yet to see a bad result following its use.

In chronic inflammation of the deep urethra behind the "cut-off" muscle, where retro-injection will not reach, the deep injection of nitrate of silver, accomplished by means of Keyes' modification of Ultzmann's instrument, which I now show you, has proven very successful in my hands. This instrument can also be used for cocaine injection, as any part of the urethra can be reached with it. Summing up the advantages and disad-

vantages of the foregoing method, I am able to give but one disadvantage, and that is the time and trouble required for its use, and truly the good resulting from it is sufficient to compensate for this.

Having briefly considered gonorrhœa, I shall now concisely sketch the modern views in regard to the pathology and treatment of urethral stricture. It is generally agreed upon that the common cause of urethral stricture is specific urethritis. All surgeons agree that acute gonorrhœa invariably begins in the anterior urethra, and gradually extends back, and "if allowed to run a chronic course, is very apt to become merged into what is known as chronic granular urethritis," by which term we are to understand that at one or more points in the urethra the epithelium has become so damaged by prolonged inflammation that the canal is no longer, in these spots, urine-tight, and the escape of urine into the peri-urethral tissue sets up a low grade of inflammation, which results in the throwing out of barriers of lymph, which ultimately become organized. The epithelial investment of the urethra, under normal conditions, is absolutely urine-tight, as has been satisfactorily demonstrated by Reginald Harrison, and he also contends that stricture formation is a conservative action. His arguments briefly expressed, are as follows: The function of the epithelial lining of the urethral canal being destroyed by long continued inflammation, layers of lymph are thrown out and become organized, thereby acting as a natural prophylactic measure against urine soakage. "Eventually, however, as in other compensating processes, certain inconveniences follow which constitute, as it were, an independent disease." The mucous membrane of the canal, although primarily involved, is only secondarily involved in the stricture-forming process, and, in many cases, strictures may be split without injuring the mucous lining of the canal.

The foregoing being the now accepted pathology of urethral stricture, I shall now consider its treatment in a general way from this standpoint. The various surgical means now in use for the treatment of this trouble are more or less familiar to all, so I shall confine my remarks this evening to the supplemental use of antiseptics in urethral surgery. In all surgical operations on the urethral canal, the most dangerous complication that can arise is what is known as urethral or urine fever, due to poison produced by the absorption of pent-up and decomposing urine in contact with the surgical wound. The epithelial lining of the canal being in its normal condition urine-tight, it necessarily follows that any breach in the continuity of this membrane robs it of its protective function, thereby leading to urine leakage and consequent urethral fever. The methods now in use as prophylactic measures against this dangerous complication are absolute cleanliness in re-

gard to instruments and parts to be operated upon, and thorough drainage. No surgeon should introduce any instrument into the urethral canal without first having washed out the canal with a carbolized solution, and this can be very readily and thoroughly done by means of the Keifer's nozzle. The instruments should also be thoroughly sterilized. So long as the parts can be kept in an aseptic condition, no untoward result need be expected, but the constant contact of urine with the parts operated upon makes it of vast importance that we use every precaution to prevent the decomposition of urine within the canal. To the accomplishment of this end the canal should be washed out both before and after the passage of an instrument. In regard to drainage, it is necessary to explain exactly what is meant by the term in this connection.

That urine fever is due to contact of urine with the urethral wound has been proven beyond a doubt by Mr. Harrison, whose views were given to the world in the January 14th issue of the *New York Medical Record*. He proved that so long as the wound was protected from contact with the urine absolutely no fever resulted, and, in substantiation of this conclusion, he cites a number of cases where futile attempts had been made to pass a catheter for the relief of retention caused by stricture, resulting in considerable laceration of the canal, where no fever followed so long as retention lasted; and he also noted that in those cases followed by retention of urine after operation of internal urethrotomy, the same absence of febrile symptoms was noted, but as soon as retention was relieved by catheterization, and urine came in contact with the urethral wound, the phenomena of urethral fever set in. The methods now in vogue as prophylactic and curative measures against urethral fever, have all alike the same object in view; first, the prevention of urine coming in contact with the urethral wound; second, to render all urine which must unavoidably come in contact with such a wound innocuous. Towards the accomplishment of the first end complete drainage of the bladder by means of median cystotomy is practiced, both as a prophylactic measure and as a curative after febrile phenomena have developed. Secondly, by the internal use of such drugs as tend to neutralize the urine before it reaches the part, and by the local use of antiseptic measures as preventives of harmful results from its contact.

I will close my paper by saying that median cystotomy can be easily and rapidly performed, and, in those grave cases of urethral fever, following sometimes the simple passage of a sound; as well as other operations on this tract, it offers the surest, safest, and most scientific means at our command for its relief and prevention. Again let me call your attention to the good resulting from the careful use of antiseptics in genito-urin-

ary surgery. Too much care in this respect cannot be used, and I have on two occasions, within the last four months, seen grave septic cystitis follow from neglect in this regard. It was my intention when I began this paper to review the modern treatment of cystitis, but as my paper is already a long one, I will leave this interesting subject for another time.

FRIEDERICH'S DISEASE. REPORT OF A GROUP OF FIVE CASES.

Read before the Indiana State Medical Society, June 6, 1888.

BY EDWARD E. WELLS, M.D.,
OF SHELBYVILLE, IND.

I desire to record, chiefly for statistical purposes, the histories of five cases of that strange form of spinal sclerosis known as Friederich's disease. The patients, three males and two females, are members of a family consisting of father, mother, four sons and three daughters.

The father is a German, 69 years of age, and a blacksmith by occupation, although at present residing upon a farm. He has always been healthy, and there are no physical peculiarities about him worthy of note. Mentally he is retrospective, dislikes the trouble of reasoning, and is inclined to be inattentive to the matter in hand. He is one of a family of eight children, none of whom are known to have had any nervous disease, and the exemption has extended to their descendants so far as known.

The mother is also a native of Germany, and is about 60 years of age. For several years she has had attacks of neuralgia, affecting various nerves. Beyond this she has had no nervous symptoms. Both physically and mentally she is always ready, quick and active. Each of her seven brothers and sisters have raised families, but no form of nervous disease has been known to have invaded this side of the house. There is no blood relationship existing between father and mother.

Henry, the eldest child, when 18 years of age, first began to complain of fatigue, slight and uncertain pains in the back, and of difficulty of locomotion. His gait was staggering, and he would stumble frequently. These symptoms gradually increased in severity, so that at the end of four years his lower limbs became so weak, and were so inclined to become "tangled," that walking was very difficult. He could not stand or walk in the dark, or when his eyes were closed. Labor always aggravated his condition. At about this time he took a prolonged rest, with amelioration of his symptoms, and an apparent checking of the course of the disease. These benefits continued only so long as he remained idle, and the malady again became progressive on his returning to his home. As years passed his lower limbs

became more and more useless, ataxic symptoms spread to the upper extremities and the tongue, he lost flesh and strength, and was confined to his bed, and finally died exhausted in February, 1887, at the age of 32, and fourteen years after the commencement of his illness. From early youth he was always self-confident and egotistical, and as time passed these traits became more and more marked, until they became prominent features in his case. Not only had he ideas—and some of them were most peculiar—of his own, but he could ill brook contradiction or opposition, either by word or deed, knowingly or unwittingly. For example, if he saw a neighbor, or even an entire stranger, doing work by a method of which he did not approve, he would express his condemnation in the strongest terms, and sometimes even fly into a fit of anger about it, although the matter was not of the least concern to him. This mental trait may have had something to do with his early demise, inasmuch as he had imbibed the idea that dietetic errors were the cause of his malady, and that in the correction of these lay his only chance of cure. He, therefore, by a process of exclusion, reduced his food and drink to a very low point—finally to minute quantities of unleavened bread and boiled rain water. For a great many months he rigidly excluded salt from his diet.

Mary, the eldest daughter, 31 years of age, was married at the age of 20, and has two children, aged respectively 10 and 7 years. After four years her marital relations were severed. Since the birth of her youngest child she has suffered from irregular, generally too frequent, and profuse menstruation. Shortly after marriage she began to experience a sensation of weariness in the lower limbs, with, at times, incoördination of their movements. For a long time these were noticeable only after unusual exertion. The ataxic symptoms have gradually increased, and her present condition is certainly a deplorable one. Her mental faculties are unimpaired. Sight and hearing are perfect, and there are no gross alterations perceptible in the ocular fields. There is an Argyll-Robertson pupil. The tongue is protruded suddenly or by jerks. There is, at times, irregularity in the movements of the vocal cords, and the speech is hesitating and jerking. There are frequent attacks of naso-pharyngeal catarrh. The spine is painful, and pressure upon the spines of the lower dorsal and upper lumbar vertebræ causes pain, sometimes acute, and at others scarcely perceptible. There are no rectal or vesical symptoms. There is absence of the knee-jerk on both sides. The muscles react well under electrical stimulus. Electro-muscular sensibility is greatly impaired or absent, with little or no diminution of tactile sensation. Her gait is unsteady and staggering, and the lower limbs are paretic, and on exertion become quickly tired. She can neither

stand alone nor walk with her eyes closed. When walking she is compelled to keep her eyes steadily on the ground before her, in order to prevent falling. Ataxic symptoms, in a milder form, are also noticeable in the upper extremities, face and tongue. Her children remain free from any nervous manifestations.

Philip, the second son, is 29 years of age, and unmarried. Three years ago he first noticed weakness of the lower limbs, together with languor, and, at times, an uneasy sensation in the back. These symptoms have gradually increased in severity, and others have been added. At the present time his gait is noticeably ataxic, and he staggers when he attempts to walk with his eyes closed. He is able, however, to find his way upstairs and through a darkened room without a light, on going to bed at night. The patellar tendon-reflex is absent on both sides. When the Faradic current is applied to the lower limbs the muscles contract forcibly, but electro-muscular sensibility is absent. Tactile sensibility is unimpaired. There is spinal soreness, especially after active exercise, but there is no pain on pressure. There are, at times, muscular pains in various parts of the body. Eyes and throat are normal, but there is a slight impairment of hearing in the left ear. He has occasional palpitations, but the heart sounds are normal. The rectum and bladder perform their functions naturally. He is aware of a difference in sensation above and below the waist, but cannot describe it. His mental powers are good.

Jacob, the third son, is 26 years of age, and also unmarried. Eight years ago he first noticed weariness, heaviness in, and a difficulty in moving his lower extremities. At first these symptoms appeared only after fatiguing exercise, but they soon became constant, and gradually increased in severity. At the present time the paresis and incoördination of movements in the lower extremities are so marked, and his gait so uncertain and staggering, that he can get about with only the greatest difficulty. With closed eyes and unsupported he cannot stand. The knee-jerk is absent, but there are no rectal or vesical symptoms. The arms, face, tongue and throat are also markedly ataxic. His speech is slow, hesitating and jerking. The pupils do not respond to the light, but his sight and hearing are good, and he has not been troubled with soreness of the throat. Mentally he may be described as slow, a trifle dull, but very positive.

Kate, the youngest daughter, is 20 years of age, and has had ataxic symptoms for three years. She has never noticed much uneasiness or soreness in the back, her complaint being a gradually increasing weakness in the lower limbs, with consequent difficulty in locomotion. Her gait is now very unsteady and staggering, and she moves about with considerable effort. She cannot walk with

the eyes closed. There is an absence of the knee-jerk and of electro-muscular sensibility. Ordinary sensation is normal, and the muscles contract well under electrical stimulation. The rectum and bladder act well. Sight and hearing are perfect, but she has a chronic post-nasal and pharyngeal catarrh, with atrophic degeneration of the mucous follicles. Her speech is noticeably hesitating and jerking, and the muscles of the upper extremities and face are beginning to be involved. There is no impairment of her mental faculties.

Of this sorely stricken family the second daughter, aged 22, and the youngest son, aged 19, as yet remain unaffected.

TWO CASES OF ATROPINE POISONING.

Read before the Medical Society of the District of Columbia, March 28, 1883.

BY JAMES J. MCKONE, M.D.,
OF WASHINGTON, D. C.

Case 1.—Mary G., married, æt. 35 years, was using a solution of atropine in her child's eye. There were from 2 to 3 drachms of this mixture, containing from 1 to 1½ gr. of the alkaloid. She poured this solution into a tumbler and left the latter standing on a shelf. An hour or two later her husband came in with a pail of beer and, not noticing the colorless liquid in the bottom of the glass, poured his wife's share of beer in the tumbler with the poison. The mother at this time was holding her female child 2 years of age upon her knee and, giving the latter a mouthful or two of the beer, drank the remainder herself. I saw the patient fifteen minutes later at her home. She complained of dizziness, ringing in the ears and dryness of the throat. At my request the patient walked to the Emergency Hospital, a distance of one square.

On arriving at the hospital the pupils were found widely dilated, skin hot, dry and flushed, pulse rapid and respirations shallow. The stomach pump was at once used to remove any of the poison which remained, and for this purpose a quart of warm water was thrown into the stomach and then returned. This operation was repeated three times. During this procedure the patient, for the first time, was slightly delirious, the delirium being of a talkative nature, and this continued until coma set in a short time afterwards. The stage of excitement was very limited.

½ gr. of morphia was now injected hypodermatically into the arm, a large quantity of tannic acid given by the mouth, and the body sponged with iced water. Thirty minutes after admission the pupils were completely dilated, a small ring of the iris only being visible. The respiration was now very shallow, but not over 20 per minute. The pulse was 180 and very weak. The

first could not be distinguished from the second sound of the heart. Stimulants were now administered hypodermatically, brandy, ether and ammonia being used alternately. A mustard plaster was applied to the feet and over the heart, and friction of the extremities was employed. Under this stimulation the pulse became fuller, but there was a tendency to spasms of the muscles of the jaw and neck; this was relieved by a hot towel placed around the throat. About 6 ozs. of urine were now drawn.

At 10 P.M., two and one-half hours after the poisoning, the pupils were somewhat less dilated, the respirations deeper, the pulse 150 and weak. The patient could now be made to swallow, and 5 minims of tincture of digitalis were given and frequently repeated at short intervals. Hot bottles were placed around her. Carphologia and subsultus tenderness now presented themselves and lasted about an hour, when a tendency to general convulsions was observed.

11 P.M. The morphia now began to show its effect. There was itching of the nose, and the respirations became deep and 11 per minute; pulse 140, pupils contracting, skin moist and efflorescence diminished. Strong coffee was then given and the former stimulants repeated. The horizontal position was maintained throughout.

At 1 A.M., five and one-half hours after the ingestion of the poison, pulse 120, respiration 13. But little contraction of the pupils during the past two hours. All muscular spasm relaxed.

An hour later the patient became quite rational, but on account of the condition of her pupils, could not recognize her child lying about six feet from her. She now fell asleep and did not wake for four hours, when she had recovered, with the exception of the hypermetropia, which was quite severe for the two days following, and present, though to a less degree, the remainder of the week. Then she was able for the first time to read ordinary print without difficulty, held at the usual distance. Her recovery was ultimately complete, though a severe pharyngitis supervened.

Case 2.—Mamie G., 2 years of age, daughter of the last patient, as mentioned in previous report, received a sip or two of the poisoned beer. The father, who was taking care of her at the time, said she began to be affected soon after the mother, and gradually grew worse until midnight, when Dr. Koonen, at that time assistant resident physician in the Emergency Hospital, went to the house and found her unconscious. She was at once taken to the hospital. On admission her pupils were found widely dilated, tongue and pharynx dry, and a copious secretion from the nostrils which had existed from birth—the child being syphilitic—had completely dried up. The skin was almost of a scarlet color, dry and hot; the pulse and heart-beat so rapid and weak that they could not be counted. The respirations were

panting. Frequent short fits of laughing were present. The limbs of the child were scarcely quiet for a moment on account of muscular twitchings, and there were several attacks of opisthotonos of short duration.

Four hours had now elapsed since the poison was taken, and the child had received no treatment. Five grains of bromide of potassium with brandy were given by the mouth, and she was wrapped in towels wrung out in cold water, which seemed to influence the convulsive movements favorably. Iced water in teaspoonful doses was given from time to time and was always taken with avidity. On account of the length of time which had elapsed since the ingestion of the drug, no emetic was given, and no morphine or other opiate was employed. At the end of two hours the spasms had entirely disappeared. Slight tympanites appeared, for which ether and tincture of ginger were administered. From this time onward she recovered rapidly. There were no sequelæ, and no after-treatment was employed.

I report these two cases to this Society through the kind permission of Drs. Magruder and Lee, of the hospital staff, the latter of whom, at my request, saw the first case mentioned.

AN UNUSUAL LUXATION OF THE CRYSTALLINE LENS.

BY CHARLES W. KOLLOCK, M.D.,
OF CHARLESTON, S. C.

The position of the luxated lens, and the circumstances attending its displacement are unusual, and hence it seems worthy of recording. On the 14th of June last C. D., a boy of twelve years of age, was brought to me with the following history:

About three weeks ago the right eye became sore, the left following in turn a week later. Still a week later a tumor appeared in the lower corneal segment, which gradually increased in size. When first seen both eyes were in a state of purulent inflammation, which was beginning to subside, though the discharge was still quite profuse. At the lower portion of the right cornea was a tumor measuring fully one-third of an inch in its transverse, by one-fourth of an inch in the vertical diameters. Externally it was composed entirely of corneal tissue, extending below to the corneo-scleral junction, which it slightly overlapped; the color was dark, and evidently caused by the prolapsed iris, which was pressed against the inner surface. The pupil was elongated downward, and its lower edge wholly beneath the tumor. There were no signs of external ulceration visible, no history of a blow having been received, nor had he suffered particularly from pain.

The cause of the purulent ophthalmia could

not be learned, and as nothing could be done until the discharge was stopped, treatment was accordingly directed to that condition. In about two weeks all discharge of a purulent nature having ceased, it was decided to remove the dislocated lens, which was done under the influence of chloroform, by passing a cataract knife through the lower portion of the tumor. Comminuted lens substance was evacuated, and the vitreous humor presented in the gaping cavity left. The edges of the corneal wound having lost their resiliency, were drawn together by a silk suture, and united firmly in two or three days. A pad of absorbent cotton and tight bandage was applied, and has so much reduced the staphyloma that it is now nearly even with the surface of the cornea.

The interesting and unusual features of the case are as follows:

(1) That the cornea was softened without ulceration on its external surface; (2) that no blow is known to have been received; (3) that the pain accompanying the accident was very slight; and (4) the unusual position of the displaced lens, entirely beneath the cornea, not involving the sclera or conjunctiva. It seems almost certain that force of some kind must have started the lens from its normal position, and that the cornea being softened by the purulent discharge, it took the direction of least resistance and formed a tumor, the nature of which was by no means clear at the first examination.

MEDICAL PROGRESS.

ANTISEPTIC INCISION AND DRAINAGE IN LIVER ABSCESS.—DR. FRED. W. ALLWRIGHT records the following case, which is interesting from the large size of the abscess, and the slight constitutional disturbance it caused:

R. H., aged 27, had been in India for a period of four years. He had had dysentery, but never syphilis, and was of temperate habits. He consulted me for a swelling over the region of the liver, stating that he had previously been treated for enlargement of that organ and dyspepsia. I made a full examination. The tongue was furred and the bowels constipated. The liver was very much enlarged, and the dullness extended from the level of the nipple to about two inches and a half from the ribs. A little to the right of the ensiform cartilage there was a distinct swelling raised above the surrounding skin about a quarter of an inch, which was tender to the touch; he also complained of pain under the right shoulder. There was considerable bulging over the whole of the hepatic region. I diagnosed hepatic abscess. A mixture was prescribed, containing chloride of ammonium, a solution of potash, and nitro-mu-

riatic acid. I saw him a week afterwards, on September 14, when the tumor was slightly increased in size, and fluctuation well marked. I passed the needle of a hypodermic syringe into the tumor, and withdrew a syringe-ful of flaky pus, intermixed with a chocolate-colored material. This was examined microscopically, but no "hooklets" were visible. I thought it might be hydatid disease. I determined upon using the aspirator, and accordingly did so on September 18, when twenty ounces of the same kind of material were withdrawn, which relieved the patient. After the operation there was no elevation of temperature, and no ill effects followed. There was no diminution in the dullness after the evacuation of the abscess; at least it was not perceptible. The mixture was continued, and the patient was fed on light, nutritious diet, and a pill containing a quarter of a grain of podophyllin administered every alternate night to regulate the bowels. No further treatment was adopted until the following November, when the bulging over the liver was found to be increased in size. The patient, making no progress towards recovery, was anxious to have something further done. An operation was decided upon. On November 21 chloroform was administered, and an incision made, with antiseptic precautions, about two inches in length from the ensiform cartilage, parallel to the last rib; this gave exit to about five ounces of pus, mixed with the same chocolate-colored material. A full-sized drainage tube was inserted, and the cavity of the abscess measured about six inches in depth. The wound was dressed with carbolized tow. The temperature was normal the evening after the operation, and never rose above 100.3° subsequently. The only complication that followed was a rather troublesome cough, but this gradually subsided. The discharge continued for two months after the operation, and from time to time there were several pieces of what appeared to be liver substance discharged through the drainage tube. The cavity of the abscess was washed out with warm iodized water (1 dr. of iodine to 8 oz. of water), and afterwards with a weak solution of iodized phenol. The cavity gradually contracted, and the greater part of the dullness disappeared. The subsequent progress was in every way satisfactory, and the recovery complete. At the present time the patient is in perfect health.—*Lancet*, July 28, 1888.

TREATMENT OF PNEUMONIA.—DR. C. R. LINGWORTH says: In my opinion the best guide to the treatment of pneumonia is not its after-history, but its pathology. There is (as in all inflammatory processes) stasis of the blood in the pulmonary capillaries, followed by effusion of inflammatory lymph into the air cells. The aim in treatment, therefore, should be to obviate stasis by giving remedies which prevent coagulation of

the blood, and with them also those which diminish the *vis a tergo*, so as to facilitate the passage of the stagnating blood through the capillary system. The old remedies for liquefying the blood were notably the carbonates of ammonia and soda; then there were those valuable remedies for that purpose, the salicylates of ammonia, soda and potash; and now we have a group of medicines which are even more powerful in that direction—the “antipyretic” group, including antipyrin, antifebrin, kairin, etc., etc., antipyretic solely in virtue of their power of dispersing stagnating blood, and thus of relieving tension in the circulation.

Those remedies which diminish the *vis a tergo* may be all described as cardiac depressants. They are digitalis, antimony, aconite, ipecacuanha and strophanthus.

In croupous pneumonia I give 10 grains of the salicylate of soda, and from 3 to 5 grains of carbonate of ammonia every two hours, with from 5 to 10 minims of the tincture of digitalis, and I frequently secure resolution in from eight to thirty hours. If by that time resolution should not occur, I prescribe the acetate of ammonia and digitalis, because it is useless to expect rapid resolution when the effusion of the febrin is complete, as in the stage of hepatization, and because the destruction of the febrin elements of the non-stagnant blood by the continued use of the salicylates, as indicated by their toxic effects, is not only inadvisable, but dangerous. I never give the salicylates in broncho-pneumonia, because, from abundant secretion, there is already deficient aëration, and consequently deficient fibrination of the blood. I give the acetate of ammonia, and for another reason; it is compatible with the perchloride of iron, in the event of the “pneumoparesis” of Dr. Richardson supervening, as it frequently does in cases of broncho-pneumonia and croupous pneumonia in patients with great cardiac debility. That powerful hæmatinic, of course, without any depressant such as digitalis, is then urgently needed, in full and frequently repeated doses. Iron in this form is also the best tonic in all cases of pneumonia and broncho-pneumonia, as soon as all sympathetic febrile disturbance has subsided.—*Lancet*, July 28, 1888.

MODERN CARDIAC THERAPEUTICS.—EICHHORST, in a very practical paper, gives some valuable hints regarding the more modern remedies in affections of the heart. Digitalis, he says, still holds the first place among these. It is of great practical importance that the remedy be given in conjunction with or immediately after alcoholic stimulants and excitants. Especially is this the case when marked cyanosis exists. Digitalis in those cases has no effect until the vagus center is stimulated by the administration of alcohol. When a quick effect is desired, the drug in the

form of powder should be employed. In certain forms of kidney disease the powder may prevent threatened attacks of anæmia. The powdered digitalis-leaves are very much increased in potency by the addition of calomel, not only in the dropsies of heart affections, but also in that occurring in emphysema, marasmus, and in liver disease. The author thinks that the cumulative effect of the remedy is exaggerated. He has given it for months without noticing any such effect.

Next to digitalis, according to the author, stands strophanthus. Comparing the two, he says that digitalis is quicker and more certain in its action, but that strophanthus has the advantage in showing no tendency to cumulation, and does not seem to lose its effect by long-continued use. Eichhorst has found strophanthus more efficacious in some cases than digitalis, especially in a case of exophthalmic goitre and in one of long-standing ascites. Sulphate of sparteine stands low in the list after the two foregoing drugs. It seems particularly applicable in cases of cardiac asthma. Next come preparations of caffeine, which have the advantage over the last-named drug from their diuretic properties. *Adonis vernalis* and *Convallaria maialis* have but very slight effect on the heart, and are uncertain diuretics. In addition, they are likely to cause nausea and vomiting.

Regarding Oertel's method the author expresses himself as follows: In all forms of cardiac weakness it is advantageous to diminish the quantity of fluid ingested; the amount of fluid allowed should always be in proportion to the quantity of urine excreted. In reference to bodily exercise one should observe the greatest caution. Violent exercise may cause overdistension of the heart, and consequent sudden death. This is especially likely to happen in cases of fatty degeneration of the heart muscle. On the other hand, in cases of retarded action of the heart, from the accumulation of subpericardial fat, methodical exercise is advantageous in freeing the heart from its mechanical burden.—*N. Y. Med. Jour.*, Aug. 4, 1888.

LAPAROTOMY FOR TUBERCULAR PERITONITIS.—At the present day, says HERMAN KÜMMELE, we are justified in regarding tuberculosis of the peritoneum as a local disease in the vast majority of instances, and like tuberculosis of the bones and joints, it may be cured by surgical means. His experience, supplemented by the numerous contributions of others, show that it is curable, or at any rate, capable of existing for many years without symptoms or disturbance of the patient's health. Kümmel tabulates 40 cases of peritoneal tuberculosis treated by operation, including two of his own. Out of this number only two died of the effects of the operation (Naumann's), apparently of septicæmia, the others recovered promptly. The duration of the cure varied from 25 years to a few months. In some cases, as for

example that of Koenig, in which there was a co-existing pulmonary tuberculosis, a fatal termination took place within a year. In Hegar's and Breisky's cases the symptoms of the complicating lung trouble were still present at the time of the report, although the patient's general health was quite satisfactory, and no local appearances (ascites) had occurred. In the other cases the patients returned to comparatively good health; there was a considerable increase of bodily weight; the ascites did not recur, and in some even the pulmonary trouble subsided.

The greater number of operations were in females, the age varying from 4 to 56 years. An error in diagnosis was frequently made, and in consequence an operation performed, the disease being mistaken for an ovarian cyst, fluid, abdominal tumor, etc. In some instances an operation was undertaken to decide a doubtful diagnosis. In the author's two cases, the tuberculosis was accidentally discovered during laparotomy for ileus. In only a few cases was the disease diagnosed, and the operation systematically resorted to as a curative measure.

The objective signs of the peritoneal tuberculosis were generally those of encapsulated ascites, of cystic character. Rarely was the disease associated with general tuberculosis, and in no case was the development of the latter hastened by the operation. It is difficult to imagine why a laparotomy should be followed by these favorable results. That the antiseptic employed was not the curative agent is shown by the fact that in some of the favorable cases nothing was done beyond removing the ascites and suturing the wound. It must be admitted that the disease sometimes shows a disposition to spontaneous cure, as is shown by two of Graefe's cases.—*Langenbeck's Archiv*, Bd. 37, Hft. 1, 1888.

THE THIRD STAGE OF LABOR.—DR. A. H. F. BARBOUR, at the conclusion of a criticism of papers by Cohn, Champneys, and Berry Hart, concludes as follows:

1. The question of separation of the placenta must be kept quite distinct from its expulsion.
2. Evidence is accumulating that, at the commencement of the third stage, the placenta is still as a whole or in great part attached.
3. Diminution in area of its site to 4 in. by 4½ in. does not mean separation of the placenta.
4. Diminution in area beyond that + the action of the uterus as a whole on the placental mass, I regard as the formal cause; the pains of the third stage as the efficient cause of separation. Blood effusion is an accident, *i.e.*, not essential.
5. During the contractions of the third stage the surface of the placenta is thrown into heights and hollows; the heights do not necessarily mean effusion below.
6. The placenta descends usually with its edge

or a point near its edge first, as Duncan described; sometimes foetal surface first, as Bandelocque and Schultze described.

The third stage I regard as a second labor in miniature. After the pain that expels the child comes a pause, during which the placenta is still as a whole or in great part attached; then labor comes on again, and the placenta is first detached and then expelled. This second labor is not always marked off by a distinct interval from the first, sometimes one long pain expels the child and then detaches and expels the placenta.—*Edinburgh Medical Journal*, August, 1888.

HYPODERMIC INJECTION OF ANTISEPTIC SUBSTANCES IN PULMONARY PHTHISIS.—A. FILLEAU and LEON PETIT record the benefits they have obtained from the subcutaneous injection of carbolic acid in pulmonary phthisis. They make use of solutions of two strengths, viz.: a 1 per cent. solution of absolute phenol in distilled water; and a 2 per cent. solution of absolute phenol in distilled water. If the phenol be pure, no accident need be feared, provided the injections be made slowly and the solution gently warmed. The dosage varies from 10 c.c. of either solution per week to 10 c.c., 15 c.c., and even 25 c.c. per day. No accident is recorded, and evidence of intoxication, except in slight degree and slowly produced, has not been obtained. The first indication of an overdose is frontal headache. When the manifestations of scrofula are present, the authors recommend the following:

R. Iodine	12 parts
Potass. iodid.,	3 "
Phenol absol.,	10 "
Aq. distillat.,	1000 "

Of this solution the dose is the same as of the other two. The authors further suggest formulae similar to those of Dr. Meunier, whereby phenol may be injected in more bland solution.—*Bulletin de la Phthisie Pulmonaire*, No. 4, May, 1888.

ACTION OF ANTISEPTICS IN TUBERCULOSIS.—DR. A. YERSIN has found that tubercle bacilli are killed in thirty seconds by 5 per cent. solutions of carbolic acid, in one minute by 1 per cent. solutions, in five minutes by absolute alcohol and 1 per cent. solutions of iodoform, in ten minutes by ether and 1 per cent. solutions of corrosive sublimate, in three hours by thymol, in six hours by 2.5 per cent. of salicylic acid. On the other hand, boric acid in 4 per cent. solution in creasote water manifested no germicidal properties in twelve hours. It was also determined by the author that a temperature of 70° C. is capable of destroying the bacillus in ten minutes, while a temperature of 60° C. has no influence. In this respect Yersin's results differ from those of Schill and Fischer, who had noticed a much longer resistance of the bacillus to the action of heat.—*Annales de l'Institut Pasteur*, No. 2, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, SEPTEMBER 1, 1888.

THE ETHICS OF MARRIAGE.

In his "Ethics of Marriage" Dr. H. S. POMEROY, of Boston, discusses in a masterly manner questions that it is proper the physician should call attention to, though of concern to the whole people. It is, in effect, an appeal to the rank and file of Americans to cast away the loose and false ideas of marriage that have gained too great a hold on the minds of some, and an appeal to others to correct their false standards of modesty. And inasmuch as it is impossible to write of the sins against parenthood without constantly referring to the woman question, and to what concerns woman's education and work, Dr. Pomeroy has much to say of these things.

We Americans, says the author, are an intense people; when we act we act intensely; the ignorance of the first principles and rules of parenthood is intense. Strangely enough, says Mr. Herbert Spencer, the most glaring defect in our programmes of education is entirely overlooked. Though some care is taken to fit youth of both sexes for society and citizenship, no care whatever is taken to fit them for the still more important position which they will ultimately have to fill—the position of parents. And how little care is taken to fit them for the equally important position of producers of children! We know that all reference to such subjects is tabooed in that inscrutable compound called "good so-

ciety." But there are so many and so good reasons for a candid and careful consideration of these matters as to require surrender of reserve and breach of reticence, without at all breaking down or impairing our standards of purity, refinement, delicacy, or modesty. Dr. Pomeroy's book is one that appeals especially to the lay public; but we believe that this class is more likely to read and study such works when recommended by physicians, at least that portion of the laity that believes that the physician has a further interest in human kind than the mere collection of fees for services rendered professionally.

Even when we would shut our eyes to the glaring defects in our matrimonial ethics, and would keep our lips sealed against conversation on the subject, the facts that we would hide are being constantly thrust upon us. The young woman that poisons her mind with the latest piece of pruriency in yellow, the French novel, before marriage, and that prevents conception until she becomes pregnant "accidentally" or so deranges her system that she cannot become pregnant, or that carries her pug in the street while not knowing where her baby is, is violating the ethics of marriage, the laws of nature, and the dictates of common sense—for the two last include the first. Every one that has common sense, or that will admit the existence of laws of nature, must admit that the primary object of marriage is the propagation of the race. Not only this, but also the care and rearing of the offspring. For the first it is not absolutely necessary that there be marriage; without marriage the second is impossible. Obviously then, those that are unwilling or unfit to assume the care of offspring should not marry. Yet almost every physician must have in his mind examples of those that wishing to marry, but unwilling to rear children, have consulted him as to the best mode of carrying out their wishes. And assuming that none that wish to avoid becoming parents can carry out their wishes, but must have children unintentionally, would not this unwillingness tend to incompleteness of offspring? Admitting that the laws of heredity would not intervene to produce an incomplete foetus, are the chances in favor of this "creature of accident" being reared properly, and receiving proper parental attention?

The sins of which we speak, the ignorance of

¹Funk and Wagnalls, 1888.

parenthood, the means employed to prevent conception, and the practice of criminal abortion, are not committed by the Jews and Catholics to anything like the degree that they obtain among the Protestants; so says Dr. Emmet, and he if any one is entitled to belief. Every Jew and every Catholic is taught the duties of married life. The Catholic is taught to believe that marriage is a sacrament, and the slightest deviation from such a belief and all pertaining to it is regarded as a mortal sin. While it is the duty of physicians to call attention to these transgressions against the laws of nature, they can accomplish nothing unless they invoke the aid of Protestant clergymen. It is not the business of the physician to preach. When he sees people flying in the face of common sense and natural laws, even those that are ever ready to attribute every calamity to a visitation of Providence instead of the outcome of folly, it is his business to utter the warning; it is equally the part of the minister to impress that warning on the minds of the people. Families and nations do not disappear from the earth by accident, but because nature becomes disgusted with them, and rids the world of them and their contaminating influence. Does it seem strange that in the majority of cases the families that disappear from the face of the earth, or that are beginning to disappear, are those that have reached what the world calls wealth and culture? Do they not begin to decay because they have passed the period of usefulness, when wealth and culture are looked upon by them only as the means for purchasing idleness and dissipation?

No one ever uttered a more true sentiment than Dr. Pomeroy, when he says that a pound of preform is worth a ton of reform. Society and the State are absolutely dependent upon the family relation for the proper conditions for the generation of the individual. We cannot have a healthy, wholesome society without a healthy wholesome family relation; without the two we cannot have a healthy, wholesome State. Can the mind conceive of a healthy, wholesome State composed of celibates? Can it conceive of such a State in the future without children in the present? Even where our family relations are not loosened by the establishment of a divorce day in the courts, they are being loosened by our notions (we cannot call them ideas) of the marriage

relation. A people cannot attain to the highest position in intelligence and morality that makes the marriage tie less binding than it should be, and that does not jealously guard it against any and everything that may tend to weaken it. One thing that seems peculiar to America, and that must inevitably have a tendency to lower our ideas of marriage into notions, is the peculiar custom of boarding of married people, instead of having a home. A boarding house or a hotel can never be a home, since in these places there can never be that amount of the high work of woman that is essential to the making of a home, nor can children be surrounded by all those influences that go to make the complete home and family. A child cannot be reared in a boarding house to be that complete human animal that makes the complete citizen. In such a place there cannot be that preformation of the child that is so much better than reformation.

Americans are in need of preformation in regard to their ideas of what is indelicate and immodest. Total reformation of the present generation we can hardly expect. We are applying ideas of preformation to the breeding of domestic animals; how much more should they be applied to the rearing of children, in order that they may be healthy and wholesome, and be adapted to the service of the State. Good lessons well learned early in life have a salutary influence over the whole life, keeping the life more pure, the body more free from preventable ills, and the mind free of actual and imaginary ills. Unless these lessons are taught they are self-learned and badly learned. If the seed of character be sown at nineteen we cannot reasonably expect a harvest at twenty-one; if they are never sown, how can any sane person expect a return at all? It is not unfrequently the case now that young married people think they owe an apology to society for having brought a child into the world, and often attempt to explain the remarkable fact by letting people know that they did their best to prevent such an occurrence. We do not exaggerate; every one that knows anything of American society in cities (at least) knows that there are very few married people that do not or have not discussed methods of preventing conception, and the majority of physicians will have no difficulty in remembering instances in which they have been consulted on this subject. It must be said that in very many cases people do

not know that there is anything wrong in this, or in procuring the death of the foetus "before the time of quickening." Many are astonished when told that destruction of the foetus at any time after conception is murder. This shows faulty education. The people need to be educated in regard to such matters, and the education should begin with the child, and the parent of the child.

It need not be replied that we cannot convince irreligious people of the truths that should be inculcated. Every sane person, religious or irreligious, recognizes that there are certain laws of nature that cannot be broken with safety to the individual. There is no difficulty in bringing any thinking person to believe that nature is a strict accountant, which strikes no false balances. We need only point out the danger to the individual of interfering with the normal processes of nature. Many believe that there is less danger to the individual in an abortion than in allowing pregnancy to go to full term. To convince them of the contrary, we need but point out Dr. Pomeroy's illustration of plucking unripe and ripe fruit from the tree. The ripe fruit may be plucked without exertion on our part, and without injury to the branch, but not so with the former.

Most of our States have statutes relating to the punishment of performing or attempting to perform abortion, and for advertising or selling the means for procuring abortion. Some of the States have statutes for punishing the advertising of or selling or possessing the means for preventing conception. New Mexico, New Jersey, South Carolina, Texas, and the District of Columbia have no laws relating to the punishment of attempts to perform abortion. In case of the death of the mother Illinois is the only State that prefers a charge of murder against the offender (murder in the first degree). The States and Territories that do not punish the advertising or selling means for procuring or performing abortion are: Alabama, Arizona, Colorado, Dakota, Georgia, Idaho, Iowa, Kentucky, Louisiana, Maine, Mississippi, Missouri, Montana, New Hampshire, New Mexico, New Jersey, North Carolina, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Washington Territory, West Virginia, Wisconsin, Wyoming Territory, and the District of Columbia. The only States that punish the advertising of or selling means for prevention of conception are California, Indiana, Kansas, Mas-

sachusetts, Michigan, Nebraska, New York, Ohio.² Two things almost every one knows: The laws are not enforced; they never will be enforced unless the public is made to see the necessity of enforcing them. Further, not only should the advertiser and seller be punished, but the advertising of means for performing abortion or for preventing conception should be punished. An attempt should be made to have laws throughout the country that are to some degree uniform. Of what value is an Illinois law for the punishment of offenses, when the offenses may be committed by parties in the next State, who advertise in Illinois papers? If the people of a State hold a certain thing to be a crime, punishable in a citizen of the State, should not the newspaper proprietor that advertises that there is a person in another State that does this thing be punishable. The three States, Illinois, Indiana, and Michigan, respectively, punish the selling of medicines for females exclusively, selling or advertising medicines with caution to the married, and for advertising medicines in ambiguous language. But persons living in any one of the three dozen other States may advertise such medicines, in whatever language they choose, in the papers published in these three States, so that the laws are practically inoperative. Thus the artificial division of our country proves a shield for persons that in other countries could not escape just punishment. Legislation, as we know too well, is not to be had for the asking, but let us at least ask for what is necessary for the protection of the people and of the very foundation of the State—the home.

TRAINED NURSES IN THE COUNTRY.

To undertake any argument as to the value of trained nurses at the present day would be scarcely less than a reflection on the intelligence of the reader. To present arguments to show that trained nurses are preferable in every respect to the old-style omniscient female, often the bane of the sickroom and generally the *bête noir* of the physician, would be as much of a reflection on the reader's intelligence. Even the public is beginning to learn that trained nurses are invaluable in cases of sickness—and when the public begins to learn a truth one may be sure that it is a truth of long standing.

² According to the table given by Dr. Pomeroy.

People living and physicians practicing in small towns and villages, and in the country, are not so appreciative of the value of trained nurses because of their unfamiliarity with them and their methods. Even in the large cities trained nurses are not very commonly sought for in cases of sickness, yet the demand may be said to exceed the supply. People living in smaller places, therefore, have but little or no opportunity to see the benefits of having a trained assistant to the family physician. DR. A. WORCESTER, of Waltham, Mass., has recently written a most instructive little book¹ in which he tells how to start a nurses' training school, how nurses may be trained in private practice, and describes the training school at Waltham.

Other things being equal, the hospital-trained physician is better than one without hospital training. The same is true of nurses. But, as a rule, we find hospitals in cities only; and the graduates of hospital training schools remain in the cities. If a small community wish trained nurses it must send to a city, with the possibility of not getting one, or the people and the physicians of the community must coöperate in training nurses for themselves. This may be done without a hospital, and without the expensive paraphernalia that would be required to train a young person to practice medicine. And admitting the value of trained nurses, and that the majority of patients and physicians are deprived of their services and assistance, should not the people and physicians take measures to supply these? It is probable that the near future will bring the people and physicians to see that this is their duty. To train nurses in the country, however, there must be some general plan.

The plan suggested by Dr. Worcester has the merit of simplicity. One need not ask where the pupils are to come from. Once show that there is a demand for something, and that something will be forthcoming; let it be known that strong, healthy, common-sense young women are wanted as pupils for a training school, whether it be large or small, and there will be no lack of applicants. Once give them insight to the possibilities of the future, and they will desire not only training, but thorough training, and it will not be an objection to them that the training must be done in their

own communities. There need be no fear that the nurse will know too much; that she never can. It need not be feared that if she knows a great deal she will be meddlesome; only the ignorant are meddlers, and the denser the ignorance the more and the worse the meddling. The more the nurse knows of the power and the action of drugs, the less likely will she be to interfere with the physician.

It is entirely possible for one or two physicians in a small place to give a nurse a thorough training; and if these physicians happen to have what are called "peculiar methods," and the nurse fall in with them, the more satisfactory will she be to those physicians. Under the system of training described by Dr. Worcester the student-nurses do excellent service during their course of training. It would be practically impossible to give a proper idea of the methods suggested by Dr. Worcester without far exceeding our limits, nor could we explain them so well as he does. We can only recommend, therefore, that those interested in the matter read for themselves what he has to say on the subject.

THE RIGHTS OF DRUGGISTS UNDER LOCAL OPTION.

The Supreme Court of Missouri has recently rendered an important decision in regard to the right of a druggist to fill prescriptions calling for alcoholic liquors, in local option places. The case was that of a druggist doing business in Cameron, Clinton Co., Missouri. In January, 1888, some time after the passage of the local option law in Clinton Co., Mr. R. W. Williams, an upright law-abiding citizen, says the *National Druggist*, and carrying on the business of druggist in Cameron, received a prescription from Dr. A. M. Collins, an old, well-known, and registered physician of high standing, calling for two ounces of whisky or brandy, with the explanation that it was for a dying child, upon whom all else had been tried in vain. The prescription was filled, and the little sufferer was revived. When the fact became known that Mr. Williams had sold the alcoholic liquor, he was prosecuted before a magistrate, where he demanded trial by jury. The jury found him guilty, and the magistrate fined him \$300, the full extent of the law. The case was taken to the Circuit Court, where the

¹ A New Way of Training Nurses. Boston: Cupples & Hurd. 6 cents.

judgment was affirmed, though the judge admitted that there was a great difference among the bench and bar of the State as to the interpretation of the law. Mr. Williams then took the case to the Supreme Court of the State in order to finally settle in Missouri whether the physicians and druggists of the State can be deprived of the right to prescribe and dispense as a medicine what may be forbidden as a beverage. The Supreme Court reversed the decision, holding that under the local option law druggists have a right to fill prescriptions calling for alcoholic liquors. Physicians and druggists in local option places will feel relieved that this question has been settled by a high court, since in some places a great deal of annoyance and inconvenience has been caused by it.

EDITORIAL NOTES.

THE BACILLUS LEPRÆ.—DR. BEAVEN RAKE, Superintendent of the Trinidad Leper Hospital, has just made a report to the Scientific Grants Committee of the British Medical Association of his "Cultivation Experiments with the Bacillus Lepræ," some of which extend over nearly four years. His conclusions are: 1. At a tropical temperature and on the ordinary nutrient media, he has failed to grow the bacillus lepræ. 2. In all animals yet examined he has failed to find any local growth or general dissemination of the bacillus after inoculation, whether beneath the skin, in the abdominal cavity, or in the anterior chamber. Feeding with leprous tissues has also given negative results. 3. He has found no growth of the bacillus lepræ when placed in putrid fluids or buried in the earth. Dr. Rake says, however, that an inquiry of this kind is practically endless, so varied are the conditions of temperature, time, nutrient media, living animal tissues or putrescent substance, and so many are the observations necessary to avoid or lessen the risk of errors of experiment.

BOARD OF EXAMINERS OF NORTH CAROLINA.—In 1886 there were 63 applicants for license before this Board; 17 were rejected—26.99 per cent. In 1887 there were 48 applicants; 14 were rejected—29.17 per cent. Of the 34 that passed the examinations 32 were regular graduates. Of the 14 that did not pass 8, or 59.14 per cent., were graduates. In 1888 there were 53 applicants; 17, or 32.07 per cent., failed to pass. Of the 36 that

passed 35 were graduates. Of the 17 rejected 12, or 70.58 per cent., were graduates. In 1887 and 1888 there were thus 101 applicants, 87 graduates and 14 non-graduates; 22.98 per cent. of the graduates failed to pass, while 78.57 per cent. of the non-graduates failed. At the meeting of this Board in May, 1888, it was decided that in future examinations of applicants shall be in writing, and the standard 70 per cent. Of the 36 applicants licensed at the May meeting of the Board, 2 were colored.

SEWAGE DESTROYERS NUISANCES.—A case of some public interest was recently tried in Liverpool. The plaintiff was the owner of some property adjacent to which the corporation of Blackburn had erected a destructor for burning the sewage of the town, and against the use of which he sought an injunction, alleging that the process was a nuisance to him and his tenants and injurious to his property. After consultation the case was settled by arbitration, judgment being given to defendants on the claim, but they to make certain alterations in the destructor, and to pay costs for the plaintiff.

OVER-CROWDING OF THE PROFESSION IN DENVER.—Says the *Denver Medical Times*: "The hotels, saloons, and even private houses of the city are littered, at the present time, with what pretends to be medical literature. The daily and weekly newspapers are filled with lengthy advertisements of quacks and charlatans. To a certain extent, these are the outgrowths of the overcrowded condition of the profession. What will the remedy be?" Higher preliminary education, higher standard of medical education, and a good medical practice act.

A QUINQUENNIAL CENSUS.—The Council of the Statistical Society of Great Britain has memorialized the Local Government Board in favor of a quinquennial census, as is the practice in almost all European countries, and in New Zealand, Queensland, Manitoba, and the North-West Territory of Canada, and in some of our own States and Territories. From the standpoint of public health, the quinquennial census is certainly preferable to the decennial, and it would be well if the former could be universally adopted in this country.

"BOBTAIL" CARS.—In the case of Mrs. Levy,

who was run over and killed by a "bobtail" car in New York, the coroner's jury found that her death was due directly to the system of running such cars without conductors, and condemned the system as especially pernicious in large cities. It is recommended that the State Legislature take action to compel the horse-car companies of New York to provide conductors for every car.

DEFECTIVE PLUMBING AND SCARLET FEVER.—From 1830 to 1883 there were 12,197 deaths from scarlet fever in Baltimore, a yearly average of 226. In 1883 there were 334 deaths. In this year the City Council passed an ordinance regulating plumbing. In 1884 there were 104 deaths; in 1885, 67; in 1886, 32; in 1887, 36—giving a yearly average of 60 since 1883. The yearly average mortality from diphtheria has decreased from 469 to 234.

DEATH FROM SEA-SICKNESS is a rare occurrence, but there was recently a case on the steamer *Dunara Castle* while running from Tyree to the Clyde. The patient was a little girl 8 years old. She was taken with severe sea-sickness, which culminated in a convulsive fit, in which the patient died, though able medical assistance was rendered.

SIR MORELL MACKENZIE declares in a letter to a London publisher, that if any British publishing house reprint in England the report of Dr. Bergman and others on the case of the late Emperor, he will vindicate his professional reputation in the courts.

AN ANALYTICAL DEPARTMENT OF THE HYGIENIC LABORATORY of the Military Medical Academy of St. Petersburg is to be established for the detection of adulterations in goods sold in the markets.

THE UNIVERSITY OF MONTPELIER will celebrate its sixth centenary at the beginning of the scholastic year 1889-90. Foreign universities will be invited to send delegates.

VICHY WATERS, according to M. Fremont, contains various microbes, which he thinks explains the different properties of these springs.

PROFESSOR PAUL LANGERHAUS, late of the University of Freiburg, recently died of phthisis in Madeira.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting March 28, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

DR. P. J. MURPHY presented the report of the necropsy of a case of

ULCERATION OF THE COLON.

Post-mortem examination by Dr. D. S. Lamb.—Some emaciation. Abdominal incision of operation healed except as follows: one oval space in lower part of incision reaching to 1 inch above pubes; it was 2 inches long and at its widest part 1 inch; the other was about the middle of the incision and was about 1 inch long by half an inch wide; both extended about half way through the abdominal wall. The wall along the line of incision was firmly adherent to intestines; there were also some adhesions to the wall laterally. The intestines were also adherent in many places to each other; the adhesions were not recent, that is they were too firm to have occurred within a few days. They probably dated from a short time after the operation. In tearing down some of these adhesions portions of the ascending and descending colon were torn open, showing many ulcers, varying in size from quite small ones to others 1 inch long. The colon throughout down to the sigmoid flexure contained blood and clots, and some granular matter supposed to be subnitrate of bismuth which she had taken. Sigmoid flexure and rectum normal. The ulcers were not all of them opposite adhesions, but doubtless these adhesions prevented their healing if indeed they were not enlarged by the irregular contractions of the intestines. Peritoneum not congested. Liver, spleen and kidneys pale, but normal. No adhesions in pelvis. Stump of uterus showed cervical canal patulous and mucus was readily squeezed into the pelvic cavity. Several ligatures were found lying loose in the cavity. Thoracic organs normal, except some old adhesions of right lung.

DR. MURPHY also reported a

CASE OF PURULENT PERITONITIS IN AN INFANT 13 DAYS OLD.

Female mulatto infant, died March 24, 1888, *æt.* 13 days. It was well up to 7th day, when oedema and redness of right labium major were noticed. The next day the swelling had extended to the lower right limb, and the next, up the back. On the 12th the abdomen was distended. A catheter passed into the bladder found it empty. The child nursed till the 12th day. There was no fever, dyspnoea, convulsions or head symptoms.

The post-mortem examination showed large livid spots over the body; the right labium still swollen and red; the other swelling had disappeared. The umbilical vein contained a normal blood-clot. Lungs slightly congested. Abdomen filled with serum, which was slightly bloody, and with pus and fibrin. The peritoneum everywhere congested. Kidneys congested. Pelves capacious.

Inasmuch as purulent peritonitis in infants is usually septicæmic in origin, it is probable that the swelling of the labium, etc., was infective.

DR. D. S. LAMB read some notes on a

CASE OF DEATH FROM STRANGULATED
FEMORAL HERNIA.

The specimen shows the region of the left crural ring; the artery vein and ring with a coil of small intestine strangulated in it. The portion of intestine involved is the jejunum about 3 feet from the stomach; this portion, with the stomach and duodenum, was much distended with flatus and soft and liquid contents, and the walls were very tender and lacerable; below the constriction the entire bowel was exceedingly contracted, the transverse colon being only the size of the little finger in thickness; inflammation had taken place in the hernial sac; there was at least one old adhesion, quite thick; and recent exudation. In the subcutaneous tissue over the pouch was a large mass of fat which felt like enlarged glands.

The patient, A. M. G., æt. 64, had been sick about eighteen months with rheumatism, and had lost much flesh. On March 14, vomiting began and persisted till next morning when it subsided, and did not return for nearly 48 hours, then recurred and continued till death, which took place in a few hours. The vomited matters were liquid and offensive, and in large quantity. The patient said she was not usually troubled with vomiting, but the nurse afterwards said there had been occasional paroxysms of vomiting. The subsidence of the vomiting followed the use of bismuth subnitrate. There was no pain complained of; only soreness of the abdomen from the use of turpentine stupes, her own suggestion.

The vomiting recurring on the 17th aroused suspicion, and inquiry was made as to any swelling. She said she had a small swelling in the left groin, which had appeared during the vomiting of the second day before. Here again, the nurse afterwards disagreed, stating that the swelling had been complained of last January. The swelling was readily felt, was slightly tender, was not affected by coughing, and there was the sensation of its consisting of enlarged glands. There was no distension of the abdomen. As she was already in a state of collapse when it was found to exist, and did not react to stimulants, no operation was attempted. Dr. N. F. Graham saw her in consultation.

The post-mortem examination showed the le-

sions as above described; as also an enlarged gall-bladder full of very pale bile and containing many gall-stones; superficial cysts of kidneys; atrophy of uterus, and also several small fibroids, and atrophy of ovaries.

The patient was addicted to use of unsuitable food and the first vomiting was supposed to be only severe indigestion. The subsidence of it seemed to confirm the opinion. The renewal strongly suggested intestinal obstruction, but even the presence of the tumor without the usual distension, especially in a subject somewhat thin in flesh, the absence of the impulse on coughing, and the masses of fat, suggested other possibilities than femoral hernia. Had the true condition been recognized at the first seizure, two days before death, no doubt an operation would have been the indication, although indeed, as the sequel shows, not very promising.

DR. C. E. HAGNER: Dr. Lamb deserves credit for bringing his case before the Society. Usually where a mistake in diagnosis is made it is never heard of. A mistake was made in this case which could have been avoided. The doctor suspected femoral hernia and allowed the tumor to deceive him. In strangulated hernia we do not usually get an impulse on coughing, especially so in femoral hernia. Nor is tympanitis usually present when the strangulation is high up in the bowel. There is no excuse for letting any lump in the groin escape attention when symptoms of hernia are present. Cut down upon the lump and examine it. In strangulated hernia the patient will die unless the gut is relieved, and there is no danger from a proper examination.

DR. LAMB did not know of the lump until two hours before the patient's death, and then she was in collapse. She had had two operations from the bowels and he supposed the pain was only from the use of turpentine. His reasons for not examining the groin were that she had stopped vomiting and was taking food.

DR. HAGNER: It only points to the importance of looking for hernia in cases where there is obstinate vomiting with pain in the abdomen.

DR. THOMPSON said there was a liability of mistaking enlarged glands for hernie. He had had an interesting case that morning in his office. The patient had been ill for two weeks with a swelling in groin. There were no symptoms of obstruction, but the tumor looked like a femoral hernia. He felt confident it was a diseased gland and made incision and exposed a gland as large as a Spanish walnut; it was soft; he caught the pedicle and removed the entire gland, leaving a deep excavation. This had the appearance of a hernia that had gone on to suppuration. It is the duty to search every region when there is vomiting and other suspicious symptoms. He had seen several cases, especially in females, where it was very difficult to determine the nature of

the tumor. He had seen several deaths where the physicians did not suspect hernia. He was called to a case some time ago, but the woman was so near dead that he refused to operate. His diagnosis was strangulated hernia, but the attending physician had not had a suspicion of hernia. After her death he made an incision and found a gangrenous gut. In such cases we should search every region and exclude symptoms until the diagnosis is clear. He had seen a peculiar case in the Providence Hospital some time ago. The woman had been under treatment for some time for typhoid fever. One day the nurse discovered the odor of fæces, and found that it came from the patient's groin. He was then asked to see her and found a suppurating fæcal fistula, caused by a femoral hernia. The case finally got well. Such cases could not occur very often. He mentioned these cases to show that hernia is not always so easily detected.

DR. BERMAN recalled a case that occurred in the Polyclinic of Professor Zeigel, in Würzburg. The diagnosis was made, by an assistant, of suppurating abscess of groin. As the diagnosis had been confirmed by the Professor, he did not question it, but kept on visiting the patient daily. He consulted with the Professor to account for the abscess, without satisfactory results. About two weeks afterwards he saw something whitish in the bottom of the abscess, pulled it out, and found it to be a large specimen of *ascaris lumbricoides*. The diagnosis was then clear. The fistula was closed and the patient recovered. He mentioned this case to show that errors may be made by those who have had large experience in such matters.

DR. JAMES J. MACKONE reported

TWO CASES OF ATROPIA POISONING.

(See p. 304.)

DR. J. LLEWELLYN ELIOT reported a

CASE OF ATROPIA POISONING.

(See p. 298.)

THE PRESIDENT said that the first paper he had heard read in this Society was on belladonna poisoning by Dr. J. T. Howard, twenty-three years ago. He thought the Society would be glad to hear from Dr. Howard on this subject.

DR. HOWARD: The cases referred to by Dr. Smith were four children in the same family. It was in the days when belladonna was considered a preventive for scarlatina. A man had been giving his children—ranging between 6 months and 14 years of age—the tincture of belladonna for ten days, and they had taken about an ounce of it. When he was called there was the most obstinate retching; the tongue looked like a piece of old dry bark, such as would be found on the sea-shore, and there was dilatation of the pupils. His diagnosis was belladonna poisoning. This before opium was recognized as the physiological

antidote for belladonna. The worst case was a boy of 5 years, who was emaciated to an extreme degree. He blistered, and gave lime-water, ammonia, magnesia and borax. He controlled the vomiting and the patient is a man now living in Philadelphia.

DR. BUSEY had been very much interested in the report of the cases. They do not, however, show the physiological antagonism of opium and belladonna. It was very unfortunate that other drugs had been given in these cases, but the good results were undoubtedly due to the morphia. He then illustrated the antagonism of morphia and atropia by giving the details of a recent case of poisoning by the latter. Six weeks before, he had been suddenly summoned to a lady who was suffering with chronic phthisis. She had been in the habit of taking an occasional dose of morphia, not exceeding $\frac{1}{8}$ of a grain at a dose. The druggist by mistake substituted 2 grains of the sulphate of atropia. She took two doses. The nurse thought she was intoxicated. This being unlikely the prescription was sent to the druggist and the mistake discovered. He reached her about 9 P.M., two hours after the poison had been taken. She was then comatose; muttering; the skin was hot and dry; muscular twitching; respirations, 50; pulse very frequent and small; and she could not swallow. One-quarter grain sulphate of morphia was given at 9 P.M., hypodermatically. An hour later there was apparent benefit. At 11 P.M. he repeated the hypodermatic injection of $\frac{1}{4}$ grain of morphia. At 12 she was sleeping quietly; the pulse was below 100, with increased tension; the pupils were less dilated, and the respiration free and full. He considered her condition satisfactory and left her to sleep until morning. She awakened after six hours sleep. In the morning she was perfectly intelligent but did not know what had occurred.

This patient took two-ninths of a grain of the sulphate of atropia and he gave her one-half grain of the sulphate of morphia in two hours, which proved a complete physiological antidote. Dr. Eliot thinks he gave a large quantity of morphia, but I do not think so. It is unfortunate that the cases were complicated by the administration of other drugs. There is no question that morphia and atropia are physiologically antagonistic. Only when morphia is employed exclusively as the antidote for atropia poisoning can their physiological antagonism be studied.

Atropia increases blood pressure and stimulates the respiratory centre. Morphia depresses the cardiac and respiratory centres, and lessens blood pressure. This antagonism (physiological) has been demonstrated experimentally and has been amply confirmed by clinical observation.

DR. POOL, when resident physician at the Soldiers' Home, was called to see two inebriates who were acting strangely by talking incoherently and

climbing about the room. They were both addicted to the use of alcohol and opium. He found them delirious. The pupils were widely dilated; the skin was red, hot and dry; respiration 60 and pulse 160. He gave them $\frac{1}{2}$ gr. doses of morphia until they had taken 4 grs. each without any improvement. He repeated these doses from 2 to 7 P.M., when one had taken 8 grs. and the other 11. By this time the pulse had fallen to 100 and the respirations had diminished, and they could be awakened. He ordered them beef-tea and brandy at frequent intervals during the night, and by morning they were all right. They both denied having taken any poison.

DR. SOTHORON: It would seem as if the poisonous effects of stramonium and belladonna were the same. The efflorescence seems to be the same and both resemble the rash of scarlatina. He had seen three cases of poisoning from the stramonium seeds in which there was delirium; the tongue and fauces were dry, and there was the general rash. He treated them successfully with ammonia.

DR. CHARLES E. HAGNER thought there was a practical lesson to be learned from the cases reported to-night. It is dangerous and there is no sense in ordering as much as 2 grains of atropia in an ounce of water when only 2 drops of this are to be instilled into the eye twice a day. The ordering of $\frac{1}{4}$ gr. at a time in 1 drachm of water is much safer, and if the patient did take it then by mistake it would not do much harm. It is wrong to order large quantities of such violent poisons. In fact, it is better in many cases, such as delirium tremens, etc., not to let the entire amount of any drug ordered be enough to kill if all the prescription should be taken at once.

DR. BERMANND endorsed the sentiments just expressed by Dr. Hagner that there is too much danger in ordering large quantities of poisons. He had recently seen the physiological effect from the use of a 1 per cent. solution of the sulphate of atropia instilled into the eye of an adult. A lady, æt. 65, had consulted him for cataract. In order to examine it he instilled 1 drop of the 1 per cent. solution into the eye. The pupil promptly dilated, and after examining the cataract he sent her home. Three hours afterwards he was sent for and found her delirious, talking wildly, as if she were drunk; the face was flushed and there was general urticaria, and the pulse and respiration were rapid. This effect was due to an idiosyncrasy. The peculiar immunity of children from the poisoning of atropia deserves mention. It can be used continuously in large doses. In one case of a child he had instilled 1 drop of a 1 per cent. solution every hour for six weeks or longer, and the only physiological effect besides the mydriasis was dryness of the throat.

DR. MACKONE: If an ounce of the solution of atropia had been ordered my patients might

have escaped the poisoning. It was the small quantity in the glass that was overlooked. The skin of the child was scarlet.

Gynæcological Society of Chicago.

Regular Meeting, Friday, May 25, 1888.

THE PRESIDENT, HENRY T. BYFORD, M.D.,
IN THE CHAIR.

Dr. E. C. Dudley presented specimens of *Carcinoma Uteri* and a *Dermoid Cyst*.

The President showed the following specimens: *Multiple Subserous Fibromyomata of the Uterus; Uterus Removed for Carcinoma of the Cervix; The Uterine Appendages Removed from Two Cases by Vaginal Section.*

DR. E. C. DUDLEY read a paper entitled:

A YEAR'S WORK IN ABDOMINAL SURGERY.

The list of seventeen cases which I now report includes all of my work in abdominal surgery in 1887. Eight operations were for the removal of the uterine appendages, seven for the removal of ovarian and parovarian cysts, one for the removal of the uterus through the vagina, and one for the incision and drainage of a pelvic monocus.

The eight patients from whom the uterine appendages were removed had, in every instance, suffered from recurring pelvic inflammations which had rendered their lives miserable, for which other means of relief had apparently been exhausted, and for which this operation was a final resort. The results of these operations cannot be as satisfactorily reported now as they might be at a later date.

Cases 3 and 12 were of nervous, neuralgic patients who had suffered for many years from disorders of nutrition, dyspepsia, dysmenorrhœa, pelvic pains referable to the region of the ovaries, particularly the left ovaries, which were prolapsed, and from various other disturbances which go to make up the symptom group of hysteria. These have been improved, but the improvement has been chiefly confined to the relief from pelvic pain and dysmenorrhœa. It is too early to predict results relative to the nervous aspects of these two cases.

Case 4, of recurring pelvic inflammation, prolapsed ovary, was not materially relieved until after the shortening of the round ligaments for a retroversion, which persisted after the removal of the appendages. I am informed that she is now very materially improved, if not cured.

In case 8, double pyosalpinx, cystic ovaries, each tube contained not less than 4 ozs. of pus. The ovaries were cystic and enlarged; no adhesions. One tube was brought up into the wound, and its contents drawn off by means of a small trocar, before the ligature was applied. The other was ligatured and removed intact. The tubes were enormously distended, and I think would

have burst before long had they not been removed. The peritoneum in the region of the appendages was studded all over with small pearly points, giving evidence of miliary tuberculosis; no ascites. Dr. Frank Billings, upon microscopic examination of the contents of the tubes, found the bacillus tuberculosis. This is contrary to the statement of an English ovariologist, who declares that tuberculosis does not exist in the tubes. No drainage was used; perhaps drainage might have been desirable on account of the tubercular disease in the peritoneum.

In case 17, inflammation of uterine appendages, only the right ovary and tube were removed, the other being entirely absent—a condition which has been observed in other cases. This woman, however, had borne children and, contrary to rule in such cases, the uterus was entirely symmetrical, the left side having been as perfectly developed as the right. At the left horn of the uterus, where the tube should have joined it, there was a slight protuberance, indicating a very rudimentary tube, and at the point of this protuberance a little depression could be seen, but whether there was a connection between this depression and the interior of the uterus I did not determine. The ovary and tube which were removed were extremely adherent; the ovary was cirrhotic and had been the seat of pain for years.

Of the seven ovariectomies, four were for ovarian and three for parovarian cysts. They illustrate both the gravity and the simplicity of these operations. The parovarian cysts were easy of removal; the others were adherent and two of them presented difficulties which rendered their removal almost impracticable.

In case 11, ovarian cystoma, the tumor was so intimately adherent throughout its entire surface, that I was unable to break up the adhesions in the usual way, but was obliged to split the cyst wall, leaving what might be called the capsule of the cyst in the abdomen, stitching it to the abdominal wound. The layers of the cyst wall were so intimately connected that the greatest difficulty was experienced in separating them. The torn surfaces bled so profusely that I used Miculicz's drainage, packing the abdomen with iodoform gauze, leaving it in for twenty-four hours, and then substituting the drainage-tube. After a long, tedious convalescence the patient was discharged, having a faecal fistula at the lower extremity of the wound. Whether this fistula resulted from some damage done to the intestine in the operation, or from the pressure of the glass drainage-tube, or from an ulcerated condition of the lower bowel, which had been recognized previous to the operation, I do not know. She had been a victim to epilepsy, which for a number of months after the operation was in abeyance, but which has now reappeared and of which she will probably die.

In case 6, ovarian cyst, the adhesions were also very extensive; not less than a square foot of surface was exposed in separating them. After breaking up some very extensive parietal adhesions on the right side, the hæmorrhage was quite profuse and from a hundred points, and not controlled by the ordinary isolated ligatures. Hæmostasis was finally secured by passing a number of silk sutures, half an inch apart and parallel to one another, deep down beneath the bleeding surfaces, and tying them tightly. This method seems preferable to the actual cautery. It is rapid and effective. The patient did well for three weeks and seemed to be securely convalescent, when she came near dying of septicæmia consequent upon several hypodermic sloughs, hypodermics having been given at the time of the operation for an alarming heart failure.

In case 1, ovarian tumor, a croupous pneumonia developed immediately after the operation, from which the patient narrowly escaped a fatal result.

The vaginal hysterectomy was for sarcoma uteri and has previously been reported to this Society. The patient, I understand, continues in good health.

The case of incision with drainage for pelvic monocyst was unlike anything I had ever seen. The cyst wall was very thin, was opened directly without invading the abdominal cavity and, so far as I was able to determine, was intimately adherent all around, except perhaps deep down in the pelvis and on its posterior surface. I could feel the ovaries and uterus through the cyst wall. Lawson Tait describes a variety of abdominal cyst in many respects similar to this.¹ He reports six cases, all occurring in young women between the ages of 16 and 26. Before operation they appeared to be parovarian cysts. Upon opening the abdomen, were found intimate adhesions between the cyst and peritoneum, limpid fluid, cysts lined with epithelium, smooth glistening surface; the uterus and ovaries could be felt through the cyst wall, were apparently healthy and independent of the cyst. The tumors were therefore neither ovarian nor parovarian. Tait is disposed to refer them to a distinct class of pathological cysts. His impression is that they are formed by dropsical distension of an ovule which had not become impregnated but which, having dropped into the peritoneal cavity, had there become attached and developed.

An examination of the contents of this cyst by Dr. Frothingham gave the following results: A sample of the fluid containing about 3 fluid ozs. was taken. Upon inspection the fluid appears clear, translucent, and contained no (macroscopic) sediment. Color, amber; odor, none; reaction, neutral; specific gravity, 1.008. Chemical examination showed albumin present in large quantity

¹ "The Pathology and Treatment of Diseases of the Ovaries." Fourth edition, p. 184. William Wood & Co.

(nitric acid, dilute, and heat test), so that the mixture coagulated into a semi-solid mass. Another portion diluted four times by distilled water showed, after applying the acid and heat, shaking to break up the coagulum, and allowing to settle for twenty-four hours, a precipitate filling one-third the bulk of the mixture. Applying Francklyn's method of reduction (*THE JOURNAL*, April 4, 1885), it is found that the original fluid contains about .026 by weight of albumin. Tests for urea, uric acid, phosphates and peptones were applied, with negative results in each instance. Microscopical examination of twelve slides revealed no sediment except a few particles of amorphous material (probably extraneous).

Preparatory Treatment.—Unless there was some special indication to the contrary, the preparatory treatment was short and simple, occupying not more than two or three days, as follows: A cathartic about forty-eight hours before the operation, repeated vaginal douches of hot castile soap suds, with thorough cleansing of the external genitalia and of the entire abdominal wall, especially of the umbilicus. One or two general shampoo baths or, if practicable, a Turkish bath with a lather shampoo of the hair. The hour for operating has been 9 o'clock in the morning, a cup of beef-tea having been given two or three hours before. Previous to the day of the operation diet is not restricted or modified.

Antisepsis.—Antiseptic drugs, as a rule, were not used in connection with the operation. They were employed for the purpose of rendering hands, instruments and patient surgically clean, and then thoroughly washed off with water which had been sterilized by filtering and thrice boiling; that is, antiseptic drugs were not brought in direct contact with the wound. Sponges which had been kept in weak solutions of sulphurous acid, carbolic acid, or corrosive sublimate, were never used until these drugs had been thoroughly washed out with sterilized water. Indeed, everything that was to be in direct connection with the operation was treated in this manner. Fumigation of the patient's room has only been done when it had previously been occupied by several cases or by a suspicious case. Sometimes, as a matter of ceremony, a little iodoform was sprinkled over the wound before the dressings were applied, but it smells bad and may do harm by exciting or keeping up nausea. If in the toilet of the peritoneum there be blood, oozing points, or pus, or if these be even suspected, I wash out the abdomen freely, putting in quarts or gallons of water, and when in doubt whether this should be done, I remove all doubt by doing it.

The same rule applies to drainage. If in doubt, always drain. I have recently lost a patient whom drainage might have saved. The adhesions were extensive, but the abdomen being perfectly dry, I closed without drainage. She did

badly for the first thirty-six hours. I reopened; there had been no hæmorrhage, but the abdomen contained an abundance of bright red serum. If this had not been allowed to accumulate at all, the result might have been different. The glass drainage-tube is always preferred. The tubes kept in the shops are too large. I have had some made, of the diameter of lead pencils, having the shape of test tubes, with many small perforations the size of a pin head at the closed end. Two or three of these tubes may be introduced if desired. They do no harm; they can be removed if nothing comes through and the openings immediately close, and they carry off the bloody serum or other fluids as efficiently as tubes of large size. Drainage not only prevents septic infection but, by keeping the abdomen dry, serves as a hæmostatic, as moisture favors hæmorrhage. It is important that the perforations at the end of the drainage-tube be quite small, otherwise portions of omentum are apt to work themselves through and make trouble in the removal of the tube. I have recently had two such cases; in one the tube was nearly half full of omentum which had worked its way through an opening only $\frac{1}{16}$ of an inch in diameter. This annoyance may be in a measure prevented by giving the tube a turn or two whenever the dressings are opened.

Medication and Diet.—The cases included in this report have recovered with very little medicine, some without any at all. Opium has been used very exceptionally. A patient who begins to take opium for pain after abdominal section ordinarily continues to have the pain and to require the opium; but if the drug be withheld, the pain generally subsides.

Case 11 strikingly illustrates the advantage of a non-opium treatment. Abdominal tenderness and distension, and other signs of peritonitis, appeared soon after the operation; it became essential to relieve the distension by evacuation of the bowels; soap and turpentine enemata were inadequate, and the movement was not without difficulty secured by means of calomel and soda, whereupon the peritonitis subsided. Had the secretion been locked up under the influence of opium, the peritonitis would probably have extended and, I fear, with fatal result.

It is perhaps not too much to say that the modern treatment of peritonitis by catharsis, judiciously employed, is sound. Not less than half of my patients after abdominal section have a cathartic before the end of the third day; the others are usually treated with copious enemata of stiff soapsuds in which a teaspoonful of turpentine to the quart has been thoroughly mixed. Upon the least suspicion of distension an action of the bowels should be secured.

During the first twenty-four hours no food whatever is given; only a little hot water, or ginger ale, or possibly champagne. On the second

day a little barley water is cautiously given, soon to be followed, if there is no disturbance or nausea, with half-teaspoonful or teaspoonful doses of milk, repeated occasionally and increasing in quantity, as the patient gives evidence of being able to bear it.

The Staffordshire Knot.—Three years ago I saw Mr. Tait apply the Staffordshire knot. In the first case after my return, I attempted to apply it and the patient died of hæmorrhage. The next year I saw Mr. Tait operate fifteen or twenty times, and particularly observed his method of applying this knot, and since then have used it invariably, and consider it, generally speaking, the best ligature. A distinguished surgeon in New York has lost a number of patients from hæmorrhage with the Staffordshire knot and has discarded it as dangerous. Indeed, a number of operators have had most unpleasant experiences in its use.

The secret of Mr. Tait's success lies in a single manoeuvre. After the pedicle has been transfixed, the loop drawn through and brought over to the point of transfixion, and placed between the two free ends of the ligature, these latter are held firmly between the thumb and finger of the left hand close to the point of transfixion. Then with the right hand he catches each free end and separately and draws the ligature perfectly tight, and while the thumb and finger of the left hand still hold the thread at the point of transfixion to prevent the ligature from slackening again, the operator, with his right hand, aided by the assistant, makes a hard knot.

An additional precaution to prevent the ligature from slipping may be wisely observed by transfixing at two points, first forcing the loop through at the juncture of the Fallopian tube and uterus in a direction from the operator, then carrying it along on the further side of the broad ligament, and drawing it through again, in the direction of the operator, transfixing at the hilum of the ovary. The loop may then be drawn over the tube and ovary, and that portion of the broad ligament which it includes, and tied as already described. This modification of the Staffordshire knot which, I am informed, Mr. Tait also occasionally employs, makes hæmostasis doubly certain, and is to be preferred on this account.

A word about the silk. The great annoyance which every operator has experienced in breaking a thread at a critical moment, while attempting to apply a firm ligature, is sufficient proof that the silk ordinarily sold by instrument makers is generally inferior and often worthless. A variety of twisted silk, known as "Chinese Grass," may be found at the fishing-tackle shops. For surgical purposes it is unexceptionable, inasmuch as it has the qualities of absolute purity and great strength.

The arrest of menstruation.—One of the chief ob-

jects in the removal of the uterine appendages, in a great majority of cases, is to arrest menstruation; in other words, if menstruation be not arrested, the operation in very many cases fails. In the early history of the operation the ovaries alone were removed, or the ovaries and a part of the tubes. It was found in some cases that menstruation continued as before or increased. Then the tubes began to be removed also, and the complete arrest of menstruation was more frequent. It was further found that if the tubes were removed entire, close to the uterus, menstruation was almost always arrested, and that in many cases which were thought to be exceptions, the tubes in reality had not been entirely removed. Oftentimes a small knuckle of tube was discovered to have been left, and to be so closely adherent to the uterus that it escaped notice. The removal of this knuckle has been known to arrest menstruation. Reasoning from these facts, it was concluded that the tubes really have more to do with menstruation than the ovaries.

Contrary to this idea, Dr. Arthur Johnston, of Danville, Kentucky, in a conversation with me several months ago, said that the true explanation of these facts might involve an entirely different conclusion. There is a little plexus of nerves in the broad ligament, in the angle formed by the uterus and Fallopian tube. When the tube is entirely removed, this plexus of nerves is entirely removed also, and on this account it may be that menstruation ceases, rather than on account of the removal of the tubes.

If this be true, it is a fact of immense value. Possibly a ganglion may be found in this region, and it may follow that the removal of this plexus alone, without reference to the ovaries and tubes, may arrest menstruation. This specimen from Case 2 illustrates the plexus of nerves, which is easily recognized by the naked eye.

The incision.—The opening into the abdomen has in most instances been short. Surprising as it may seem, it is sometimes easier to perform difficult manipulations in the abdomen through a small opening than through a large one. The large opening permits the intestines and omentum to rise up in the way of the operator, and to render inaccessible the field of operation. With the small incision, a soft sponge or two will keep the intestines entirely out of the way, and although the field of operation may not be as easily drawn up to the incision, the small abdominal wound can be easily forced down to the field of operation. This is even true of large ovarian cysts with extensive adhesions. After the removal of the fluid, the lax abdominal wall permits the opening to be moved about to almost any part of the cavity. In many instances the short incision enables the operator to do his work with the minimum amount of operating, and for obvious reasons, therefore, with minimum risk.

It is well, in closing the abdominal wound, to tie the sutures with bow knots, leaving the ends long, in order to obviate the necessity of introducing new sutures, in case it becomes desirable, at any time, to reopen the wound.

General Remarks.—It has so happened that in almost all of these cases there has been a steam radiator under the window before which the operations were done, the patient's feet being toward the window. This insured a constant warmth of the feet during the operation, and perhaps has in some degree contributed to the freedom from shock.

In removing the appendages, the toilet of the peritoneum may be much facilitated by forcing a soft sponge down into the cul-de-sac of Douglas as soon as a tube and ovary is drawn up into the wound to be ligatured; two or three sponges may be required. If there is much oozing, they may be frequently changed. By this means the blood is immediately taken up by the sponges, and when these are removed the peritoneum is dry. Otherwise blood would find its way into the cul-de-sac and form a clot which might escape notice.

I have not brought the specimens, with the single exception of Case 2, because there is not very much of interest in the ordinary specimen. Every one presents specimens in abdominal surgery, and it has, therefore, ceased to be a luxury to look at them unless they are very remarkable.

DR. C. T. PARKES: I think Dr. Dudley is to be congratulated upon these interesting and successful cases, but I think the doctor will not have done all his duty until he has given us some of the snags he has met with in the shape of deaths. These cases are full of interest, but I have always found the cases that have died have been the ones from which I have learned the most. I have no doubt that will come in due time.

So far as my experience goes in the removal of the uterine appendages, in every case there has been found disease of the appendages or ovaries, there was either closure of the internal or external opening of the tube, some enlargement, or some disease of the ovaries themselves, which really pointed to the condition of the appendages as the cause of the trouble.

In the case Dr. Dudley reports of cyst with drainage, that had no connection with the uterus or ovaries, which, after an opening was made into the abdominal cavity and the finger introduced, the ovaries and uterus were felt perfectly normal, gave rise, in my mind to the suspicion that instead of being a cyst with a distinct and separate wall that could not be recognized or differentiated from the peritoneum, it was a case similar to one I have seen, which would come under the appellation of an encysted dropsy, where the inflammation of the peritoneal cavity had been of such a nature as to agglutinate the intestinal folds together, and formed a perfect roof to the cavity,

and the fluid had gone on accumulating until the quantity of fluid had shown the external manifestations of a cyst; when cut into the cavity was found to have no connection with the uterus. It is what Spencer Wells calls an encysted dropsy. I think it would be difficult to say that there was a true cyst-wall in a case of that kind, if no separation whatever could be found. The character of the fluid he mentions rather points to that condition.

I was exceedingly well pleased to hear the doctor speak of his experience with reference to antiseptic precautions, it agrees with my experience so far as abdominal work is concerned. In a case I reported a few years ago, the only case in which I had had much trouble in that series, and in which I carried out Lister's instructions, it gave me more trouble than all the rest, and I think it was from using too strong antiseptic applications, so I resumed the same course the doctor has indicated with regard to antiseptic precautions in abdominal cases.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Enormous Doses of Chloroform—Rare Case of Hydramnios—Nursing for the Sick Poor—Preventive Medicine in the Victorian Era—Iodized Oil—Cremation Society in Manchester—A Hindoo Woman in Edinburgh—A Misfit Denture.

The capacities of the human body for supporting enormous doses of powerful drugs when gradually habituated to their use has seldom been more strikingly illustrated than by the case of a woman, on whose body an inquest was recently held in London. A medical man described her as the largest chloroform-taker in the world, and stated that she had been accustomed to take as much as a pint a day. The various organs of her body were described as being healthy.

A somewhat rare case of hydramnios attaining very considerable dimensions by the fifth month of pregnancy has been under the care of Mr. H. A. Reeves, at the Hospital for Women. The patient, aged 21, had been married four years, and came under observation with a large and rapidly increasing abdominal tumor. She stated that a month previously, being then four months pregnant, she had fallen down a flight of steps, and ever since she had suffered from perpetual and acute pain in both flanks and the body had continuously become more and more distended. There was also commencing œdema in the feet, dyspnoea on exertion, and inability to adopt the recumbent posture. She was under observation in hospital for fourteen days, the abdominal swelling increas-

ing daily. A large pyriform mass, cystic and fluctuating, occupied the left flank and extended upwards under the ribs. In the right flank was another cystic tumor, only more rounded and smaller. Fluctuation was easily elicited in some axes of the whole mass. Vaginal examination showed the usual signs of pregnancy. The swelling rapidly became barrel-like in contour and the patient's condition grew steadily worse. As the tumor was bipartite and asymmetrical, as no uterine contractions could be felt and no foetal heart sound heard, Mr. Reeves decided to make an exploratory abdominal section. A median incision exposed an asymmetrical tumor, which was entirely uterine, blocking the pelvis and extending up to the ensiform cartilage. With great difficulty the wound was closed, and taking into consideration the daily increasing distension, the paper-like thinness of the uterine wall and the acute distress of the patient, the os was dilated, the membranes ruptured, and from the uterus several gallons of amniotic fluid were evacuated, along with twins of about four to five months foetal life. The uterus contracted, the abdominal incision was at once freed from strain and no uterine hæmorrhage ensued. Intra-uterine douches of iodized water were daily used and the puerperium ran an ordinary course. The temperature on the fourth day rose to 104° , but eventually the patient reported herself as having made a satisfactory recovery.

The Queen has appointed a provisional committee for the purpose of organizing a scheme for establishing with part of the Woman's Jubilee Fund a system of nursing the sick poor in connection with St. Katharine's Hospital. The Duke of Westminster, Sir Rutherford Alcock and Sir James Paget, who have already given much time and consideration to the matter, will still continue to control and help to elaborate the scheme. It is stated that Mr. Rathbone, M.P., who has already modelled a Nurse Training Institute at Liverpool at a private expenditure of £20,000, has promised his assistance to the committee.

Dr. Thorne Thorne has published in book form his inaugural address, delivered by him before the Epidemiological Society under the title of "The Progress of Preventive Medicine during the Victorian Era." It gives an admirable account of the growth of knowledge as to zymotic diseases during the last fifty years. The author traces the effect of the various Acts of Parliament concerning vaccination on the community, and shows the saving of life which has been effected as the result of them. He especially dwells on the advantages which accrue to children by compulsory vaccination in infancy, and gives the results of compulsory revaccination in Germany. The volume is an admirable *résumé* of all that is known concerning the causation of epidemic maladies.

A new preparation known as iodized oil is being

well spoken of. It is stated to be a solution of pure iodine and to contain 10 grains of iodine to each fluid ounce. The iodine does not, however, exist in a free state, but in a combined form, and hence causes no discoloration of the skin when applied as a paint or as a liniment. The so-called oil is useful in all cases in which the employment of tincture or liniment of iodine is indicated, excepting where strong counter irritation is required. It is mixable with spirit or water, so that when necessary its strength can be increased by the tincture of iodine or diminished by the addition of water.

The Formation of a Cremation Society for Manchester has been determined upon at a largely attended meeting held in that city. A provisional committee has been appointed. A list of about 60 persons favorable to the movement was submitted, including several clergymen, medical men, and others. A large number of ladies have joined the Society.

A Hindoo woman is now studying medicine at Edinburgh. She is the first Hindoo woman that has ever come to Great Britain for that purpose.

In the City of London Court a lady was sued for the value of a set of false teeth, but she refused to pay on the ground that they did not fit, and the jury decided this was so, with the result that the dentist did not get his money.

G. O. M.

DOMESTIC CORRESPONDENCE.

Electrolysis in Stricture.

Dear Sir:—Like my friend Dr. J. D. Thomas, of this city, whose paper on the treatment of urethral stricture by electrolysis appeared in THE JOURNAL of August 11, I, a few months ago, purchased the apparatus and entered upon the treatment of a few cases of that affection.

The following is an abstract of the record of one case: Wm. S., the subject of multiple stricture of the urethra, the result of gonorrhœa contracted thirteen years ago, had been treated for some time with conical steel sounds with comparative success. Before electrolysis was begun the narrowest point existed at $2\frac{1}{2}$ inches and permitted the passage of 18 French olive bougie. The séances were eight in number and one week apart. They lasted from five to fifteen minutes, and the strength of current used was from six to nine cells. There was neither hæmorrhage nor pain at nor after any application. The negative pole was attached to the insulated bougie and the positive to the sponge electrode.

The result of the seven weeks' treatment was decidedly unsatisfactory. A large inflammatory nodule had formed about the seat of stricture, and the latter had contracted so that a 16 French bou-

gie would not pass. The stricture continued to contract after the discontinuance of the treatment, and dilatation was again resorted to.

This case was treated strictly after the methods so clearly prescribed by the exponents of electrolysis, and there is no question in my mind that the patient was seriously injured by it. I treated other cases simultaneously by the same method without good results but, fortunately, did them no harm. The articles which have so strongly endorsed this treatment give little or no suggestion of possible mischief, and my experience would lead me to believe that more prominence should be given to this phase of the subject.

Yours truly,
JOHN J. BUCHANAN, M.D.
Pittsburgh, Pa.

MISCELLANEOUS.

AMERICAN RHINOLOGICAL ASSOCIATION, Sixth Annual Meeting, to be held at Gibson House, Cincinnati, Ohio, September 12, 13 and 14, 1888. The following papers will be read:

Chorea of the Soft Palate, caused by the Hypertrophy and Hyperæsthesia of the Mucous Membrane Covering the Posterior Part of both Inferior Turbinate Bodies. By J. E. Shadle, M.D., St. Paul, Minn.

A Short Criticism of the Prevalent Methods of Treating Diseases of the Upper Air Passages. By R. W. Wilcox, M.D., New York City.

Paper. By J. W. Compton, M.D., Evansville, Ind.

Paper. By Robert Levy, M.D., Denver, Col.

Etiology and Pathology of Nasal Diseases. Opened with a Paper by Thos. F. Rumbold, M.D., St. Louis, Mo.

Etiology and Pathology of Acute Catarrh of the Upper Air Passages, by J. G. Carpenter, M.D., Stanford, Ky.

Conditions that Develop Naso-Pharyngeal Diseases. By N. R. Gordon, M.D., Springfield, Ill.

Paper. By H. Christopher, M.D., St. Joseph, Mo.

Relation of Nasal Diseases to other Diseases, Including the Brain and Nervous System. Opened with a Paper by John North, M.D., Keokuk, Iowa.

The Effect of Nasal Inflammation on the Mind. By Thos. F. Rumbold, M.D., St. Louis, Mo.

A Case of Epilepsy Yielding to (apparently cured by) Treatment Directed to the Naso-Pharynx. By E. L. Sessions, M.D., Hillsboro, Texas.

Tuberculosis of the Nose, Mouth and Tongue. By R. S. Knobe, M.D., Fort Wayne, Ind.

Treatment of Nasal Diseases by Local and Constitutional Medication. Opened with a Paper by A. DeVilbiss, M.D., Toledo, Ohio.

The Galvano Caustery in the Treatment of "Catarrh." By E. R. Lewis, M.D., Crawfordsville, Ind.

Local and Constitutional Treatment of Acute Catarrh of the Upper Air Passages. By J. G. Carpenter, M.D., Stanford, Ky.

Paper. By Frank M. Rumbold, M.D., St. Louis, Mo.
Surgical Means in the Treatment of Nasal Diseases. Opened with a Paper by Thos. F. Rumbold, M.D., St. Louis, Mo.

The Removal of Gummatous Growths from the Nasal Cavities by Surgical Procedure. By A. G. Hobbs, M.D., Atlanta, Ga.

Surgical Treatment of Nasal Catarrh. By A. B. Thrasher, M.D., Cincinnati, Ohio.

Nasal Intubation. By J. A. Stucky, M.D., Lexington, Ky.

Hay Fever (Pruritic Rhinitis), Pathology and Treat-

ment. Opened with a Paper by P. W. Logan, M.D., Knoxville, Tenn.

What is Hay Asthma? Is it a Pathological Misnomer. By J. W. Fink, M.D., Hillsboro, Ill.

Hay Fever Cases. By E. R. Lewis, M.D., Crawfordsville, Ind.

Are Mechanical Means ever Curative *per se*. By Thos. F. Rumbold, M.D., St. Louis, Mo.

POISONOUS EFFECTS OF TIN SALTS.—The following is from a recent issue of the *English Mechanic*: Dr. Leonard W. Sedgwick says that the harmlessness of the salts of tin other than the chlorides is generally taken for granted, but the following facts appear to show that the assumption is incorrect: "In October, 1886, I saw nine persons in one well-managed, healthy household simultaneously suffering from watery diarrhœa, sickness and great pain in the abdomen. A close investigation served to show that, excluding the water they drank (which was pure) and the air they breathed (which was free from drain contamination), there was one thing, and one thing only, they had done in common, and that was the eating of pears stewed in a newly tinned copper pan. It came out, too, that many of them had suffered from two or three similar attacks on previous days, and that these attacks all occurred on days when they had eaten stewed pears. I therefore obtained some pears to cook, and, on testing the juice, found it laden with tin salts but containing no copper. That the diarrhœa gave way in a short time to simple remedies, that the drainage and the water supply of the house were perfect, that the eating of the stewed pears preceded on the same day each attack of illness, and that pears similarly stewed were found to contain large quantities of tin salts, were to my mind conclusive, if circumstantial, evidence that the attacks of the diarrhœa were caused by the tin salts. And then occurred the thought that, if the cooking of a somewhat acid fruit for a short time in a tin vessel effected the formation of a poisonous salt of tin, the keeping of an acid fruit for months in a tin can must have a like result. I therefore tested the contents of cans of apricots, pineapples, peaches and tomatoes, and in every instance found a large amount of a salt of tin. In this I was confirmed by my friend Mr. Hugh Power, who also in one specimen detected a salt of zinc. Since then I have seen several instances where painful diarrhœa followed the eating of a tinned fruit, especially in one case where tinned pineapple was eaten by several persons, who all suffered in like manner. And so I am compelled to believe that many cases of casual and unexplained nausea and diarrhœa are caused by the use of tinned fruit. Indeed, since the occurrence of the cases in 1886 I have lost no opportunity of relating these things to my personal acquaintances and of advising the use of bottled fruits only."

DOCTORS' BILLS.—The medical fraternity of Johnson County, Mo., adopted the following resolution: "After January 1, 1888, no account will be allowed to run over six months from date of first visit, without satisfactory settlement. All accounts are due when services are rendered. Parties who are in the habit of running bills from one year to another without paying, must continue to employ their former physician until he is paid in full, or pay cash for every visit in advance to the new one. Charity cases excepted." The State Society of Arkansas has adopted a similar rule, and the law sustains them. If such rules were general all over the United States, would it not be a mercy to the people by compelling them to stand by their physician long enough to give the patient a thorough course of treatment, as well as teach people to pay their honest debts?—*Denver Medical Times*, August, 1888.

BANK NOTES AND INFECTION.—A contemporary directs attention to a point of some sanitary interest in connection with the use of a paper currency—namely, the transference of infectious disease by this means. He discourses

with somewhat alarming realism on the mischievous power possessed by the dirty notes for small sums which are common in some foreign countries. In a like strain he deals with the well-thumbed £1 notes so familiar in the sister kingdom of Scotland. Greasy, discolored, and old, he seems to trace them passing from hand to hand and class to class, avoiding no form of illness but escaping all measures of disinfection. The question thus opened is indeed to some extent a practical one, and there certainly is, from the medical standpoint, more to be said in favor of a frequent issue of new notes than of the continued circulation of old and dirty ones. The velvet softness of a well-used note is familiar to many of us, and it suggests the distinct advantage of using in the exchange of money some smooth and crisp form of paper upon which the germs of disease would be less likely to establish themselves. No form of paper money can of course be purged from all such injurious influences, but there is no doubt that cleanliness even in this matter is in keeping with sanitary rule.—*Lancet*, Aug. 11, 1888.

THE YALE THERMOMETRIC BUREAU.—The Thermometric Bureau established in 1880 in connection with the Observatory of Yale University is accomplishing a work which physicians ought to appreciate. It has examined a gradually increasing number of thermometers during the years of its existence, but its usefulness is not measured by the number of instruments that pass through its hands. There is from year to year an improvement in the quality of instruments of American manufacture submitted for verification, both actual and relative to foreign manufactures, and the Observatory claims a share of the credit for this improvement.

"It may now be fairly said—as it could not have been said before the institution of this Bureau—that the best clinical thermometers of American manufacture compare favorably with the best foreign manufactures, both in the smallness of the amount of the required corrections and in their uniformity throughout the scale." Such was the statement of the managers of the Observatory in their last year's report, and this year they find occasion to say that their good work is still progressing.—*Boston Med. and Surg. Jour.*, August 16, 1888.

DISINFECTING INSTITUTIONS IN GERMANY.—Meetings are being held in almost every city and town of any size in Germany for the purpose of arranging for the establishment of disinfection institutions like those in operation in Berlin and Dresden. *Rundschau* (Prag) recommends individual apothecaries to establish small disinfection ovens in towns where the authorities will not take action, and thinks that such could be made sources of considerable revenue.—*Sanitary News*.

SEWAGE VENTILATORS.—Tail factory chimneys are used as sewage ventilators in Carlisle, England.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from August 18, 1888, to August 24, 1888.

Col. Charles Sutherland, Medical Director, directed to inspect the medical department at Fts. Brady, Mackinac, and Wayne, Mich.; Fts. Porter, Niagara and Ontario, N. Y.; Madison Bks. and Plattsburg Bks., N. Y.; Ft. Preble, Me.; Ft. Warren, Mass.; Ft. Adams, R. I.; Ft. Trumbull, Conn. Par. 7, S. O. 168, Div. Atlantic, August 16, 1888.

Lieut.-Col. Edward P. Vollum, Asst. Surgeon U. S. Army, leave of absence extended two months. Par. 17, S. O. 192, A. G. O., August 20, 1888.

Surgeon Jos. R. Smith, Medical Director Dept. of Dakota, to inspect Fts. Pembina, Totton, Buford, Abraham Lincoln and Yates, D. T. Par. 4, S. O. 77, Dept. of Dak., August 13, 1888.

Surgeon Anthony Heger, U. S. A., in addition to his other duties, to attend to the duties of the Medical Director

Div. of the Atlantic, during absence of Col. Chas. Sutherland. Par. 4, S. O. 170, Div. Atlantic, August 18, 1888.

Major Joseph P. Wright, Surgeon U. S. Army, detailed as a member of Army Retiring Board, Ft. Leavenworth, Kan., vice A. A. Woodhull, Major and Surgeon U. S. A., relieved. Par. 10, S. O. 190, A. G. O., August 17, 1888.

Major John H. Janeway, Surgeon U. S. Army, granted leave of absence for one month on surgeon's certificate of disability. Par. 2, S. O. 41, Div. of the Pacific, August 8, 1888.

Major A. A. Woodhull, Surgeon U. S. Army, relieved from duty with Army Retiring Board, Ft. Leavenworth, Kan. Par. 10, S. O. 190, A. G. O., August 17, 1888.

Major Harvey E. Brown, Surgeon U. S. Army, upon being relieved by Capt. Wm. C. Gorgas, Asst. Surgeon U. S. Army, to proceed to his proper station, Jackson Bks., New Orleans, La., reporting in person to the commanding officer of that post for duty. Par. 8, S. O. 187, A. G. O., August 14, 1888.

Capt. Stevens G. Cowdrey, Asst. Surgeon, granted leave of absence for one month. S. O. 77, Dept. of Texas, July 25, 1888.

Capt. Fred. C. Ainsworth, Asst. Surgeon U. S. A., to proceed to Atlanta, Ga., and inspect the new Army hospital at that place. Par. 18, S. O. 192, A. G. O., August 20, 1888.

Capt. Louis M. Maus, Asst. Surgeon U. S. Army, having completed rifle practice at Camp S. B. Luce, Fisher's Island, N. Y., to return to his proper station (Ft. Schuyler, N. H.). Par. 3, S. O. 171, Div. of the Atlantic, August 20, 1888.

Capt. Geo. H. Tarney, Asst. Surgeon U. S. A., to proceed to St. Augustine, Fla., via Palatka, accompany the U. S. Troops thereat to Huntsville, Ala., as medical officer, and thereafter to return to his proper station (Ft. Monroe, Va.). Par. 4, S. O. 165, Div. Atlantic, August 13, 1888.

Capt. Daniel M. Appel, Asst. Surgeon, ordered to Ft. Bliss, Tex., for temporary duty. S. O. 77, Dept. of Tex., July 25, 1888.

Capt. Wm. C. Gorgas, Asst. Surgeon U. S. A., leave of absence granted in S. O. 177, A. G. O., August 1, 1888, revoked, and ordered to proceed to Camp Monte Sano, Huntsville, Ala., and report in person to the commanding officer thereof for duty, relieving Major Harvey E. Brown, Surgeon. Par. 8, S. O. 187, A. G. O., August 14, 1888.

Capt. W. O. Owen, Jr., Asst. Surgeon U. S. A., Ft. Leavenworth, to report for temporary duty to the commanding officer, Ft. Gibson, I. T. Par. 1, S. O. 104, Dept. of the Missouri, August 20, 1888.

Asst. Surgeon Leonard Wood, U. S. A., to proceed from Ft. McDowell to San Carlos, A. T., and carry out the instructions of the Department commander; upon completion of that duty to return to proper station. S. O. 89, Dept. of Ariz., August 1, 1888.

Asst. Surgeon Charles F. Mason, U. S. Army, ordered to Ft. Washakie, Wyo. Ter., for duty. Par. 5, S. O. 190, A. G. O., August 17, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending August 25, 1888.

Surgeon Manly H. Simons, detached from "Constellation" and to the Naval Academy.

P. A. Surgeon A. C. H. Russell, detached from "Constellation" and to the Naval Academy.

P. A. Surgeon S. H. Dickson, detached from Marine Bks., Washington, D. C., and to the U. S. S. "Richmond."

P. A. Surgeon F. J. B. Cordeiro, ordered to the U. S. S. "Mohican."

Surgeon W. G. Farwell, detached from the U. S. S. "Saratoga" and ordered home to wait orders.

Surgeon Dwight Dickinson, detached from the U. S. S. "Portsmouth," ordered home to wait orders.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. XI.

CHICAGO, SEPTEMBER 8, 1888.

No. 10.

ORIGINAL ARTICLES.

CHOREA.

Read in the Section on Diseases of Children, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY GEO. WHEELER JONES, M.D.,
OF DANVILLE, ILL.

In calling your attention to the subject of my paper, I am aware that chorea is not exclusively a disease of childhood, nor one that may not find its victims in all ages of life, even to the second childhood of extreme senility; still, its manifestations in the majority of instances are so confined to the years of minority that it has taken rank as a disorder of the earlier periods of life. Nor am I less aware that there is perhaps no malady to which humanity is subject that has received more attention than this. Its literature is so full and voluminous, exists in so many languages, and extends over so great length of time, even from the beginning of medical observations, that it may be considered one of the earliest pathological crosses we have been called upon to bear and to consider. At one time ranked as purely psychical in character, it has again received the reputation of being a plainly physical expression of a local injury to clearly defined cerebral tissue. In the search for its character and origin it has seemed truly to be the *ignis fatuus* of the medical world, now almost within our grasp, and the next observation as far away as ever; dancing, as its name implies, all over the field of professional thought and speculation—having its primary source in the borderland of the unknowable—relegated for ages to the regions of psychological pathology the consideration and investigation of which was often undertaken at the risk of life or excommunication, it has proven so fascinating a topic as to command attention and careful study from the most thoughtful and observant of every generation.

Judging from the results of philological investigations the disease has always, at least until quite recently, been considered either psychical or sexual in origin and exhibition. The names of a number of saints have been coupled, as adjectives, with the unrythmical display of muscular contractions facetiously denominated dancing. Its

association with sexual abuses and irritations, especially about the age of puberty, has kept alive a popular belief as to its phallic source, a belief which perhaps has a larger foundation in fact than many another common notion, and which seems to be receiving much confirmation in the latest researches. Lest I might be misunderstood, perhaps I had better explain at this point what I mean by the last suggestion. Points and tracts of irritation are almost universally found in the basal ganglia of the cerebrum, in the genito-urinary tract of the cord, and near the seventh cervical vertebral region of the cord, all together suggesting marked irritation of the sexual system either as cause or effect, and in either case capable, through the reflexes, of sustaining an irregular motor action such as we see in this disease, the length of such sustention depending largely upon the moral and medicinal forces brought to bear upon each individual case. The natural history of such cases as can be properly estimated and honestly studied seems to go far to establish the correctness of this view in at least a large number of instances.

This thought will be reverted to when considering the etiology of the malady. So fully has the life history of the disease been given by various brilliant writers, both professional and secular; so clearly defined and beautifully described have been the symptoms, diagnosis and prognosis, that it would be an act of supererogation on my part to attempt an elaboration of these points in a practical paper such as I wish to lay before you. Several eminent writers will occur to you as being high authority on these divisions, and as having left little or nothing unsaid; so that, referring you to them, I shall only mention such items under these headings as may be necessary to make clearer the short argument, with its conclusions, to which I ask your attention. Several theories in etiology have been advanced, but none thus far covering sufficient ground to prove a satisfactory solution of the various problems embraced in a discussion of the disorder. The following are given by different authors as the probable character of its causes—I give them in the order of their antiquity: Psychical, neurotic, embolic, cardiac (which is really a subdivision of the preceding), and rheumatic. Of these perhaps the embolic

has been the most fascinating theory of recent dates, and has attracted the attention of many of our best writers, who for a long time had matters their own way, until Dickinson's careful and conscientious anatomical researches rendered the occupation of this line of thought no longer tenable as a sole explanation of its factors in etiology. That inheritance has much to do in the matter is now no mere suspicion.

We find a certain class of cases arising in adults, and evidently appearing at a certain point in senile changes, which are parts of family histories. The New England cases on record will illustrate these. But that inherited physiological conditions, conditions bordering upon if not a part of degenerative processes, are at the base of a very large proportion of the cases of this disease, there would seem to be little doubt. And it is this fact with its obscure accompaniments, so difficult of investigation and analysis, that has made the credence in psychic forces so slow in disappearing from the popular mind. In our search for post-mortem appearances we have looked for those gross conditions palpable to the unaided senses, and we have been puzzled to find nothing at all commensurate with the symptoms we have combated during life. A few of the coarser evidences of congestion, with the necessary physical changes of appearance and function in the basal ganglia, and especially in the corpora striata, gave rise for a time to the preponderance of belief that organic changes in the latter were the chief causes of the morbid manifestations met with during life, and extremely plausible were the arguments brought forward to sustain such view; so convincing, in fact, that their application to the pathological conditions found in later investigations will be almost a matter of course.

While the theorizing of late French writers has shown, or rather suggested, the apparent relationship between hysteria above and epilepsy below as connected by the intermediate disorder of chorea, and while the latter seemed likely to be lost as a distinct affection in the subdivisions of the other complaints, the various "ties" and neuroses, the scalpel and microscope and patience of Dickinson has laid before us the facts connected with the pathological state of the entire central nervous structures as placed upon exhibition by fatal attacks of the malady now under consideration. According to Dickinson and those who have since had the opportunity of verifying his observations, there is a state of general hyperæmia, varying only in degree from the faintest trace of congestion to actual or immediately threatened disorganization in a large proportion of the gray matter, extending from the base of the cerebrum to the lower or sacral portions of the spinal cord. In the cord this especially involves the posterior roots, and within the skull the corpora striata, the latter of these being most seriously

affected. It is reasonable to believe that in the vast majority of cases of chorea we have only a very slight grade of hyperæmia of these structures, which, under careful management and rest, with nature's tendencies to rally from derangements of all kinds, will certainly recover within a specified time and without any apparent ill results; and that this general, or in many cases local, hyperæmia, with its hyperæsthetic accompaniments, is the only discoverable pathological element for consideration, is a fact seemingly too clear to need other argument for confirmation. Still, to believe that it is the only etiological factor for us to contemplate would indicate a grave and serious error of judgment. The results of post-mortem observations indicate that the disease has its primary origin essentially in atomic errors of nutrition antedating by years, it may be by generations, the patent outbreak which attracts the attention of family and physician.

A very large number in the list of causes of the disease are formal and not efficient, are potential but not primary in their action—*e. g.*, a long walk in the sun or a heated discussion is the active agent in determining an attack of mania, but the true causes are other, often obscure and extending over months and years of a previous life whose irregularities of thought and habit may never be known, and can only be surmised from the startling revelation which comes to the social circle and the saddened household as one of its number disappears behind the portals of a hospital for the insane. To carry the illustration a little further, and render still clearer what I have yet to say, were I bold enough to offer another name for chorea, and one, I believe, far more suggestive of its etiological probabilities, I should call it *mauia musculi*—insanity of the muscles—with a primary origin in nutritive changes in the nerve tissues which would necessitate for its full elucidation and proper individual management, in the large majority of cases, a careful investigation of the previous family history "to the third and fourth generation."

The rapid spread of the so-called epidemic forms of the disorder as appearing in the Middle Ages, and more recently in the vagaries of thought and ritualism of various semi- and pseudo-religious sects in England and America, is hardly to be taken into consideration, as this form of neurotic disturbance is more closely allied to hysteria, and involves derangements of the higher nerve structures such as may be entirely absent in the great majority of cases of pure chorea as we now understand it. Still, as these mental and moral absurdities were and are to a great extent the result of influences extending over a great length of time, often in the direct line in succeeding generations, their careful study is worthy of our fullest effort as throwing much light upon both psychoses and neuroses, and all intermediate manifesta-

tions of deranged nerve function. A study of the political, social and religious conditions preceding and accompanying these outbreaks reveals to us a mental strain affecting a large class of ignorant and half-educated people, trained in none of the principles of self-control, and inheriting crude ambitions and spiritual aspirations utterly hopeless of fulfilment in any existence of which a healthy mind can conceive. Many an organization of to-day in the various fields of human effort has its origin and possible continuance in the unfortunate mental condition of those who seem as yet only on the borders of actual disease, but whose minute nerve tissues are abnormal in their action. The communist and anarchist in politics and society; the noisy, ranting, half-civilized religionist; the statuto-maniac, and the "Christian scientist," are all illustrations of the nervo-mental irregularities in question, and will all bear scientific investigation for the facts they furnish as bearing upon allied conditions of well established professional importance, and as illustrating the influence of inheritance and the pitiful struggle of degenerating organisms in their despairing battle along the lines of the unyielding law of the "survival of the fittest," a law the principles of which, in its application to the further propagation of our race, is becoming of more vital importance to each succeeding generation.

An intemperate, a syphilitic, a licentious, a passionate ancestor will lay the foundation in atomic changes in the nutrition of the finer forms of tissue which renders a subsequent generation especially disabled from resisting the degenerative processes which may be inaugurated by a hundred active agencies lying in the way of every human life. The harass and the worry of dismantled hopes, disappointed ambitions, political, domestic, and commercial failures, all conduce to the same end in the establishment of a substratum of physical error upon which to see developed the vagaries of the various psychoses, neuroses, and still grosser aberrations of evolution. By such full elaboration of this line of thought as is entirely beyond the province of and time allotted to this paper, we will be enabled to join together the numerous etiological views, and comprehend the correctness of the application from individual positions of observation, and the incorrectness of the claim that any *one* view is capable of satisfying the requirements demanded in a solution of the difficulties in the way of a full etiological settlement of the perplexing study before us.

We thus learn that the foundations for the disease, the possibilities of its development, are laid and established, in most cases, in the generations preceding the one in which its manifestation is made apparent; and that, with the endowment thus received from ancestral accumulations of abnormal nutritions, very slight are the causes which may finally rupture the ever strained relations be-

tween the guiding thought and the executive will which is loosened in its moorings; and thus a rheumatism, with all its pathological possibilities in cardiac changes, embolic contingencies and nerve degenerations, becomes an active factor in the development of a form of choreic display. The same may be said of a malaria in its manifold expositions, some of which will even go so far as to determine types of actual alienation, as seen especially in the forms of cyclical insanity. The harass and mental worry connected with many of the unfortunate features of our modern school system is a prolific exciting cause of a very large number of the cases now occurring, one writer stating that 20 per cent. of the school children in New York City are affected more or less with the disorder. The torture of companions and playmates, the consciousness of injustice and miscomprehension—for we must remember that most of these cases are in children who are previously over-sensitive and acutely alive to the consciousness of some personal peculiarity or characteristic variation—the reflex irritations of virile development and sexual congestions; anything, in fact, which will unfavorably impress a nervous system in which there already exists a congenital or acquired disarrangement of the ultimate molecular constituents which need not be disorganization nor even marked hyperæsthesia, which are far more likely to result in pronounced dementia or acute mania.

That a very close relationship exists between this and some other diseases there seems little doubt. Eczema and chorea are very often coexisting or interchangeable in exhibit. So is rheumatism, and that in a very peculiar way, the chorea alternating with the high temperature of the more acute types of the rheumatism—and this in the cases where we might often fear in the midst of the exalted pyrexia to see a development of convulsions, to which extent I have occasionally witnessed the advance of the nerve disturbance. Epilepsy, hysteria, the *tics*—are all more or less related to chorea, while it is found to complicate or be associated with a large number of diseases, either by accident or through the incidental influences of nerve degeneration; for the disorder is essentially one of exhaustion and irritation of nerve substance, and brought into active display by whatever disturbs the molecular balances.

Perhaps its most dangerous complication is pregnancy, but as that is beyond the province of this Section, I simply mention it as an illustration of the rarity of fatal consequences as the disease occurs in childhood, and for the suggestion the fact contains as to the foundation of the disorder in an inheritance which tends to a discontinuance in this connection of further race, or rather family permanence.

Relapses are very common, especially in one or two years, and have their origin perhaps more

frequently in fright or great excitement than anything else.

I believe that, in our changeable climate especially, the disorder is often associated with, if not many times dependent upon the nerve congestions and irritations accompanying nephritic disorders. In several cases of enuresis, when the annoyance was relieved and a partial suppression of urine obtained, the result has been followed by the development of choreic symptoms which promptly disappeared upon a return of the incontinence. Knowing the nervous disturbance which often accompanies the high arterial tension caused by the inactive kidney, I have conceived the idea that many cases of chorea may be dependent upon a state of subacute (if I may use the term) urea poisoning, sudden in development and temporary in continuance. The analysis of a number of cases rather confirms me in such belief, *e. g.*, chorea is a very common sequela of scarlatina, and a marked attendant of chronic Bright's disease, as illustrated in a case I now have under observation.

The disorder is said to be very rare in negroes, some writers, claiming their complete immunity, and in two or three favored localities of the torrid zone the disease is unknown. Why this is the case is unknown, nor is the usual explanation of the lower grade of intellectual development entirely worthy of consideration, as the disease almost certainly occurs in the conditions of retrogression and "reversal to original types," not, as a rule, in the strong constitutions and vigorous mentalities of the victors in the advancing lines of progress. I should be much more inclined to believe that in the exempt races there is an undiscovered something in the regions of the corpora striata, the *parta perforata*, the gray matter generally, or their reflex connections, which made these people unimpressible and invulnerable in disorders containing a marked psychic element, and set them apart as distinct from the white race as is the donkey from the horse—not a lower people, but a distinct type of evolution. But then, neither anthropology nor ethnology is the subject-matter of this paper.

The terminations of chorea, except in pregnancy, are almost invariably favorable, the patient being restored to his usual health in a few weeks, and only requiring that care and consideration afterward which in all well regulated families is a result of the discovery of a weak or tainted spot in the special breed. The weak places are to be strengthened, the tainted ones to be cleaned, the family life and general environment often totally changed, and such crossing made in future propagations as to secure to succeeding generations a clearer blood and a stronger brain. The possibly permanent amyloid or fatty changes in the elements of the large central ganglia are such as to justify this view and this advice, especially as we meet with so many cases followed by a permanent

nervousness only too suggestive of those early senile changes which make the optimist look grave and reconsider the correctness of his positions. As illustrative cases, and to more clearly define some of the points I wish to especially emphasize, I offer you, in brief, the following:

Case 1.—Age 1 day. Marked left unilateral chorea. Nurse said she noticed it when she first dressed the baby after birth. I had observed some irregular movements while tying, and afterward in dressing the cord, but gave it no attention, as the movements of all, or almost all newborn babies are choreic in manner, although not in character. The sex is male. For five days the movements grew rapidly worse, involving both sides and being almost continuous, after which a steady subsidence of all symptoms took place, the child recovering entirely in two weeks, and remaining so as yet, *i. e.*, so far as the chorea is concerned. Its maternal grandparent is a dipsomaniac, its father a syphilitic, and its mother a physical wreck from excessive childbearing. One of its brothers died at 4 years of cardiac mitral disease, a second died in convulsions, a third has an obstinate tetter, and *this* child will probably die during the coming summer of failure of nutrition in some form or other. The family have moved to another county, but I shall keep them under observation.

Case 2.—Girl, *æt.* 10 years; thin, wiry, neurotic from birth. Had general chorea, especially manifest in lower extremities—a regular dancer, in fact. Is quick in all her muscular movements and bright in speech, but slow to learn at school. Disease came on gradually, lasted several weeks, and seemed to get well under treatment, when a relapse occurred, and six weeks was required to control the case. She is now quite well, but gets very nervous under the slightest observation. Her maternal grandparents died of obscure disorders illy defined as "consumption," her mother is suffering from an inherited taint unknown to herself, but readily defined by her medical attendant. The mother is very neurotic. The father's mother died of tuberculosis, and the father is very subject to "rheumatism." There is no cardiac disorder in the patient. The families on both sides are highly neurotic in character and several of them "queer," two uncles of the patient (maternal) having committed suicide, and almost all the immediate relatives having but one child if any, most of them having none.

Case 3.—Female, *æt.* 16, well-formed and plump, but mentally not strong. Very sweet disposition, but lazy and idle. Marked tendency to sexual excitation. Heart normal, other organs normal. Active cause of attack, fright. This girl was a tough case, resisting the united efforts of the practitioners of several "schools" for several months. Coming into my hands, I gave her no medicine, gave her full nourishment, outdoor

exercise, and brought high moral influences to bear upon her. She speedily recovered, but will always be a little "weak-minded." Her father is a "crank," his father ditto; his mother has been a chronic invalid for years, a "nervous failure." The patient's mother is a plump, healthy woman with no moral sense—little idea of right and wrong; her grandfather died of "consumption" venereal in origin, and her grandmother is a town gossip. Two brothers are dipsomaniacs. The patient's brother is a fit subject for the "home for feeble-minded."

Case 4.—Female, æt. 15; nice-looking, healthy appearing girl generally. Had a mitral cardiac murmur, general cardiac hypertrophy. General chorea, more marked on left side. Very anæmic when presented for treatment. Active cause of disease, sexual annoyance from a follower she did not like. She had menstruated but three months before the attack of chorea. Her environment was not conducive to an elevated grade of morality, and she was somewhat disinclined to engage in the occupation of her associates. Owing to the continued action of the exciting causes, her medical man made a failure and she was sent to me. I had her taken to the home of distant friends where everything was changed, and a few weeks' care, kindness and medication completely restored her to excellent ordinary health. In this case the father is a common drunkard, the mother worse, and a neurotic, one son a dipsomaniac, and every member of the family "off" in morals and health. The grandparents are unknown, if they ever knowingly existed.

Now I offer these as mere types of extreme cases to illustrate points in the argument. They are cases of medical friends not residing in my own vicinity, but with which I am thoroughly acquainted. In each of these families the retrograde changes are so fully established that the two succeeding generations will probably witness the extinction of the stock, unless in some particular individual who shall fortunately inherit an excess of the better elements, along with an endowment of greater vital force and a proper marriage, a long course of tender care and wise training should lay the substructure for a comparatively new lineage. Of course these illustrations are not offered as types of all families in which chorea is found, but as exemplifications of the final possible consequence of the causes and conditions which permit the development of chorea, and as warnings of the fact that a chorea is a danger signal pointing toward degeneration, and is to be promptly and largely heeded by all in whom is a love of family, and a desire for the perpetuation of line and race.

A few words as to treatment and I am done. I know that ours has been characterized as the "science of observations," and in the past of our profession deductions from seeming facts have

been always unsafe. But I think the trouble has been with our "facts." Reasoning by deduction from the *truth* is always safe and productive of the best of results to all mankind in all departments of knowledge, and in no age of the world is this more clearly seen than in our own day and generation; and thus we have only to be sure of our facts, to know certainly "what is truth," and the large knowledge and patient wisdom of the well-trained mind advances safely and triumphantly into the unexplored regions of thought open to human endeavor. If the views suggested in this paper are correct, that the primary causes of chorea are such as may produce a condition involving ultimate degeneration and nervous exhaustion, not necessarily associated with even hyperæmia, but implying a relaxation of the vital forces in the ultimate elements of nerve tissue, and in intimate relation to the disarrangements of malnutrition, we must look for those remedies whose tonic influence, recuperative powers and alterative properties are such as will kindly, gently, but steadily bring strength and order out of the weakness and threatened nervous chaos into which our patient is drifting, by which he is even now invested.

At the head of the list, and endorsed by every writer of any prominence, and I have consulted a very large number, is arsenic. Remembering the remarkable tonic properties of this drug, in medicinal doses, upon many other disorders of the nervous system, its wide usefulness in the neuroses of malnutrition and malassimilation, the advantage taken of its subtle sustaining powers by the experienced guides and dwellers in high altitudes, where long-continued exertion in a rare atmosphere tends to unsettle and demoralize the nervous economies, we are prepared to expect much from its potencies in chorea, and we will not be disappointed in the vast majority of cases, whether we use it as a result of observation, or a consequence of intelligent deduction. It should be given on these general principles, but to *each individual* as the special constitution requires, rapidly pushing the remedy to the point of full tolerance and holding it there as its effects will permit and the case in hand demands, carefully avoiding any toxic manifestation. In extreme and obstinate cases, especially of the inherited senile class reported from New England, the hypodermic administration of the remedy gives better results than any other course. Arsenic may be combined with anything else that the requirements of the case suggest as demanded.

This is one of the disorders in which the Hahnemannians have obtained considerable notoriety from the fact that, under the influence of removal from exciting causes, rest, nutritious food and general hygiene, the vast majority of cases of chorea recover without any medication; and as these fellows give "arsenicum" for almost everything, there is accidentally added to good

general management and nursing the most appropriate of remedies. As overwork and worry are powerful factors in determining an attack, rest, as absolute as practicable for a time, to be changed to gentle, passive outdoor exercise as soon as the symptoms commence subsiding, or from the first in mild cases, will always be in order. The various "food tonics," selecting the one most pleasant and best agreeing with the patient, should be given from the first, along with easily digested and highly nutritious food. I have found general daily inunctions and gentle massage excellent adjuvants and as seeming to have a decided influence in abbreviating the period of convalescence, the moderate and healthful stimulation of the peripheral branches having a highly beneficial effect upon the nerve centres. All sources of reflex irritation are to be thoroughly removed, and they will sometimes be found where least expected.

Iron, zinc, and the compounds of phosphorus, are very useful as auxiliaries to be introduced for the elimination or control of special symptoms, some of which are nearly always found. The same may be said of the bromides, chloral, ether spray to the spine, hyoscyamus, eserine, nitrite of amyl, skunk cabbage, cimicifuga racemosa, cod-liver oil, cocaine, malts, and everything else which has been recommended, for the use of which there might be some temporary demand in an individual case. But every intelligent physician has favorite remedies of his own selection for the combat of symptomatic derangements. Phosphorus uncombined is an irritant and worse than no remedy, but the organic compounds of phosphorus are of great value as true nutrients. In conditions of actual hyperæmia of the cord especially, I have obtained excellent results from ergot, from ipecac in small doses, and from hydrastis, the two latter being remedies of greater potency than is generally known, seeming to act as direct tonics to the spinal and sympathetic nervous systems.

Strychnia, the "nux" of the "homos," is another agent of very great value in the treatment of chorea. The mistake in its administration consists in giving too large a dose. The $\frac{1}{1000}$ to the $\frac{1}{500}$ of a grain four times daily is sufficient to commence with in children of 8 or 10 years of age, which dose may be cautiously increased, or more frequently administered, if deemed desirable. In these minute doses it acts as a gentle tonic stimulant to an exhausted, depressed and irritable nervous system, producing no unpleasant effects so far as I have been able to discover. Where rheumatism is a prominent factor, I consider salicin with phytolacca decaudra and guaiaci as the very best treatment in most of cases. Electricity is coming to the front of late as another reliable remedy in the ordinary forms of the disease. It should be used in the form of galvanism and applied with caution to the brain, not using more than 3 milliamperes daily, so as to produce an anodyne or

sporic effect. Downward galvanization of the cord is the correct method of its application to the spine, where its soothing and steadying influence is often manifest to a remarkable degree. It is a remedy well worthy of trial in all cases the least violent in degree or obstinate in character.

I believe I have brought forward most of the points I wish you to consider. Chorea is largely on the increase, especially in this country, and many of the causes, both remote and active, are within the power of our removal. If I have offered a suggestion that will make our course plainer, and our duty more imperative, I am content, and shall sincerely rejoice if I have been in the least instrumental in throwing an additional glimmer of light upon a subject of so great importance to so many and of such deep interest to myself.

REVERSIVE ANOMALIES IN THE STUDY OF THE NEUROSES.

Read in the Section of Practice of Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May 8, 1888.

BY IRVING C. ROSSE, M.D.,
OF WASHINGTON, D. C.

In studying the causes of nervous disease we cannot overlook neurotic inheritance and predisposition, and we are obliged to recognize the importance of reversive anomalies not only from a biological, but from a pathological, point of view. We often come across such terms as atavism, and teratology, in the more modern works that deal with the investigation of the nervous functions.

The subject of morphological and physiological retrogression not being well explained in any of the text-books that have come under my notice, it may be a sort of stumbling-block to some, as it was to me, until a short time since, when I sufficiently familiarized myself with enough of the details of the topic to prepare a systematic paper, lately printed in a standard medical publication.

Conservative heredity, displaying itself intermittently in the form and function of progenitor and progeny, has no doubt existed in all organic beings from time immemorial; but the idea does not seem to have taken verbal shape and embodiment until the botanist, Duchesne, created the word atavism to designate one of the proceedings of heredity. The tendency of living beings to reproduce in time a succession of individuals like their parents may manifest itself in a mediate, a direct, or a collateral form. This phenomenon has for its condition, first, variation; for, if living beings did not offer any variation in their type, heredity would be necessarily and always immediate, and atavism would be confounded with it. But the typical forms modify: in some measure and for some cause, whatever it be, they may transmit these modifications to their descendants.

This transmission operates either on the first generation or in subsequent generations; in the first case there is *immediate* heredity, in the second case *mediate* heredity, or atavism. In its turn atavism may crop out in a direct descentance or in a collateral descentance.

For fear that I am going too fast, and in order to make myself better understood, I must revert to some of the terms that establish the compass and extent of this singular law of intermittency which rules the greater part of the states of life.

Some writers consider it as a force distinct and antagonistic to heredity; others a particular case of heredity—the whole heritage of an anterior production; while others look upon heredity as a generic term of which atavism is a *modality*, that is, a difference in mode or form.

Another writer explains atavism as the reappearance in an individual, or in a group of individuals, of anatomo-physiological characters, positive or negative, which their immediate parents did not show, but which were present in their direct or collateral ancestors.

The "solution of continuity in the line of direct heredity," known as atavism, is derived from the Latin *atavus* (a great grandfather); and I would define it as the tendency in animal and in vegetable life to inherit biological preëxistences and to return to a primitive type progressively altered. It is by virtue of this tendency that living organisms inherit peculiarities from their remote ancestry which their immediate parents did not present.

Atavism is not to be confounded with ordinary inheritance or heredity. In the latter the tendency of nature is to reproduce in the offspring certain peculiarities of the parental organization; under the influence of atavism, the offspring may take the traits and characters of the primitive forms with no resemblance either to father or grandfather, but to ancestors more remote. Atavism should be distinguished from the variations, teratological, pathological, or toxonomic, that interrupt the succession of hereditary phenomena. Nearly synonymous is the term *survival*, used by Tylor to signify a superstitious remainder or residuum of bygone ages, and the Darwinian expression *reversion* to indicate the occasional or individual appearance of traits accumulated by heredity and handed down from remote ancestry. Reversion is also used to signify the actual returning of a variety or species to such remotely descended traits. This is instanced in the tendency of animals long domesticated, when they become feral, to revert to the pristine form. As a case in point we may mention the wild horses of Montana, which are such a source of annoyance to stock raisers in enticing away tame horses that their slaughter is made an object of hunting parties. That the notion of atavism has prevailed for some time, it is only necessary to allude to

the biblical version regarding the visitation of the sins of the father upon the children of the third and fourth generation. In the sixteenth century Montaigne noticed these strange transmissions, and wondered how the little drop of semen from which we are produced, bears not only the impression of the bodily form, but a likeness of thought and inclination through a progress so hap-hazard and so irregular that the great-grandson shall resemble the great-grandfather, and the nephew the uncle. Darwin, speaking of the injurious characters that tend to reappear through reversion, mentions the blackness in sheep, and among mankind some of the worst dispositions which occasionally, without any assignable cause, make their appearance in families.

To come down to the present time, there are men among us to-day "who have come too late in a world too old"—men whose skulls are of an absolutely neanderthaloid type; men whose minds are struck with an immobility, an arrest of development, an intellectual atavism, a reversion to ancestral forms and prehistoric ideas as well-marked, for example, as the birth in a family of a red-headed child whose parents are not xanthochroids, or the reappearance in a flock, at intervals, of the familiar black sheep. In the brain of such of our contemporaries, in consequence of the reappearance of an ancestral conformation, there appear the ideas of the middle ages, which make of this contemporary a living fossil, absolutely inaccessible to modern ideas. All of you can recall acquaintances of this description. Such people are found clinging to hoary-headed errors and old superstitions, not only in science but in all the walks of life, social, religious and political. Of what use is it to talk to such men about the reduction of the tariff, or the brotherhood of man, of association, of science? Such men, cerebrally speaking, are of the reactionary class, and though walking about under the mask of contemporary manners, belong to the middle ages just as much as though they wore sword and doublet.

It is no vague generality when we say that the characters transmitted by atavism are of all orders, normal, pathological, teratological, intellectual, and moral; and that they may be observed in the two kingdoms, animal and vegetable, in domestic animals and in man.

The atavic influence has been well traced in the laws that determine the evolution and culture of a plant, and in its reversion to the wild or uncultivated state. This may be witnessed in many flowers and vegetables, and in fruit trees, but the mention of the experiments made with the little flower known as the *bluet*, or bluebottle, and with Indian corn, will suffice as illustrations. Broca continued these experiments for eight years. He found, among a bed of bluets sowed with seed collected from an open field, the greater

part of the flowers to be blue, but some bore violet flowers, and even some a little reddish. The seeds of these reddish flowers were sowed and collected the following year. Of a hundred flowers, about two-thirds of them were a fine blue; others presented various shades, ranging from blue to violet, from violet to red, and even to rose. The lightest colored of these flowers were preserved and used the following year to sow another border. This time the number of flowers entirely blue was little less than half; the greater part being violet or red. There were many red, and some of a red so light as almost to pass for white. It thus appears probable that in making a methodical selection from each generation of the lightest-colored flowers, the conditions are favorable to obtain a fixed race of *bluets* quite *white*.

The influence of atavism is further shown in maize, or Indian corn, of which there are two varieties, or rather two distinct races, the light and the brown. That they are more than varieties is shown by the fact that we can never obtain by culture intermediary shades. Artificial fecundation being easy upon this androgynous plant, permits us to obtain variegated ears, which bear at the same time light grains and brown ones, as we see in what is known as "pop-corn;" but each grain belongs to one or the other race. A farmer, having accidentally discovered an ear of corn entirely brown, called the attention of Broca to this extraordinary circumstance. He considered it a natural variety, produced spontaneously, perhaps, under the influence of an atavism going back to a great number of generations. The grains of this ear having been planted, gave sixty-nine ears, thirty-five of which were light and thirty-four brown. Repeated experiments gave equal results. A fact worth noting on this point is that all the ears of the same stalk were of the same color.

Atavism is shown in the seminal principle that passes secretly through a generation, as is seen in certain insects, the wood-louse, for instance, where a single fecundation answers for nine generations of insects, all of whom are born prolific, and procreate without the help of the male. In this case the individual of the ninth generation has received his life, his form, and his instincts from an eighth grandfather, a long time disappeared. Another example of an anatomical order occurs in silk-worms of a white race who produce a certain number of yellow *cocoons*, although these have been carefully weeded out for more than a century.

The same law that governs the vital continuity in the foregoing instances applies to the lower animals and to mankind. Atavism in pigeons is well known; and nearly every one has noticed the stripes on certain horses, which are a reversion to their common ancestor, the zebra. According to Quatrefages, it is in vain that they kill

each year, in the flock of black sheep in Andalusia, every lamb that bears the least trace of white wool; each year there are born still some individuals that have the proscribed tint. In domesticated animals atavism plays a considerable rôle in all races that have been formed by breeders. With dog-fanciers and stock-raisers it is a matter of so much concern that they have need to exercise great care in the multiplication of these animals, and to choose as reproducers only those whose grandfathers have no transmissible defect. On this point the experiment mentioned by Darwin may be cited: The Earl of Powis caused some domesticated hump-backed cattle to be crossed by the wild species of India, with the result not of producing a medium grade of characteristics, but of a marked reversion to the ancient. If the time allowed, I might adduce numerous other instances of remote atavism, such as that of the numerous muscles appearing abnormally in man which are normal to the lower animals, notably the monkey. Other facts of the same order have reference to the teeth; the persistence of the molar and the metopic sutures and of the semi-lunar fold in the eye, double mammarys or uterus; and other sleeping conformations, that are sometimes recalled into existence.

It is in virtue of atavism that man, like other animals, often reproduces the traits of his grandparents. Characters occasionally make their reappearance in him which we have reason to believe were possessed by his early progenitors. Unhappily for man, atavistic antecedents are not taken into account in the matter of union of the sexes. People marry and the offspring frequently resemble the grandparents, not only morphologically, but in temperament, diathesis, and even their diseases.

It is well known that portrait galleries and the monuments of churches in Europe help to trace the source from which some long-lost type of feature has been derived; and the reappearance of the Bourbon nose in France is a matter of common knowledge.

Less vague facts of this order are those occurring in the cases of crossing of the colored races. Martin de Moussy has observed families in which at the end of several generations there were a series of children having much more than their father or mother the signs of an African mixture going back at least to a fifth anterior generation. He cites also a woman whose father was a quadroon and whose mother offered traces of African blood, married to an Englishman of pure race. She had nineteen children, who all offered unequivocal traces of this sixteenth of African blood. On the other hand, two sisters of this woman, married also to Europeans, had children who bore no trace of the paternal mixture. (*Bulletin de la Soc. d'Anthropologie*, 1865, p. 288.)

The occasional appearance of a child covered with hair is regarded by many as a fact of very old atavism. The hairy men of Japan, the Ainos, are also believed to be reversions to some ancestral form, and it is argued by some that the anthropoid apes may be the descendants of ape-like men. Persons who have lately visited the Paris Hippodrome may remember a pilose Russian, whose peculiarities are believed to be a phenomenal reversion to the characters of a very ancient lost race. Other examples of teratological pilosism might also be cited. It is thought by those who have given the matter attention that many races of men have lived before the present ones without sending representatives of their types down to us; but they have not disappeared without the blood of several among them being transmitted, by infinitesimal dilutions, down to the present races.

An attempt to point out with precision the laws of atavism results in the statement that every organized being is the product of two forces, one of which is the resultant of his complete genealogical tree, from the first origin of the organic branch from which he springs, and the other is furnished by all the circumstances that have acted upon the individual himself during all the duration of his development. It is further asserted that when men or animals manifest impulses of an excitable character, and exhibit pleasures and sympathies that seem to be out of relation to their culture and personal experience, or to the culture of the family or the race, whether in dreams or in waking, the source of these must be found in long past or ancestral memories produced according to the law of reversion.

Perhaps not the least curious of the modes of atavism is its influence in the province of the mind. Philogenic heritage manifests itself in connection with memory. According to Galton, the celebrated Hellenist, Dr. Porson, whose memory was surprising for its extent and fidelity, transmitted this peculiarity to one of his grandchildren, and Lady Hester Stanhope claims to have inherited her grandfather's memory. Assuming that certain ancestral synesies have been ancestrally realized in time and place, the reversion to them may become the starting point of a new evolution. The capacity of reproduction or a new development of the transmitted antecedent synesies or substrata is ancestral memory. The faculties that preside over the representative signs of ideas, it is said, are also subject to the law of correlative evolution and reversion which is manifested both in health and disease. Scriptory atavism is witnessed in the reversion to ancestral styles of writing; and in the speech it is noticed in the reversion to ancestral or racial pronunciation of letters and words. In aphasia the patient often reverts to the language of childhood,

which is his only language, and like some races of savages, he is unable to pronounce labials. A further pathological reversion is seen in dreams, which in fact are nothing more nor less than abnormal reminiscences and reproductions. Even the pleasures and pains of memory may be transmitted as substrata from remote ancestors. States of consciousness, owing to ancestral reversion, are shown by various facts. It has been noticed that in a menagerie the straw for bedding lions and tigers could not be used for horses, because the odor terrified them when brought into the stable. Yet many generations of horses have passed away since they were troubled by these beasts. Sir Daniel Brewster's fear of drowning, which haunted the minds of more than one of his descendants, is also cited as an instance.

Reversion to synesies is shown during special conditions of the brain tissue, such as characterize sleep and dreaming, somnambulism and insanity. Certain vain pleasurable and painful states are likewise due to ancestral reversions. The keen pleasure afforded by the sight of mountains and hills; many prejudices, antipathies, and æsthetic sentiments are due to ancestral substrata.

In no other way can I account for these conditions as observed in myself while strolling about the streets of Edinburgh, or in listening to the bagpipes, in climbing the heathery Scotch hills, or the misty hills of Alaska—sights and sounds that doubtless afforded similar pleasure to my Caledonian ancestry.

Emotional reversion is noticed in those cases of cerebral disease in which the semeiotic or sign-making tissues are involved, and speech or the other modes of expression are affected. Immoral dreaming among persons whose life is above reproach during waking hours, is cited as a further instance of morbid emotional reversion.

There are also reversions owing to defective evolution and nutrition that can be traced beyond immediate ancestors to the substrata of the race acquired during savage or primitive life in long distant ages. An instance of this occurs where the conduct is that of uncivilized man. In theroid idiotic, or imbecile reversion to brute-like character of form, there are no signs of morphological reversion, but the dominant aberrations are theroid. The permanence of a substratum of savage life is seen in our large cities among the vicious classes, who are to all intents and purposes savages in everything but speech, dress and name.

Of psychological interest at the present time are the reversions to ancestral modes of thought in France, where there is a reversion to the ancient doctrines of metempsychosis, and of the evolution and transmission of souls.

In human pathology the reappearance of morbid traits existing in ancestors, but not in immediate parents, can be maintained by cited cases; and the influence of atavism in the hereditary

transmission of disease can be traced for four, five, seven, or in fact, an unlimited number of generations.

Alternate heredity of anomalies have been noticed in such conditions as polydactylism, hare-lip, gibbosity, and the like. Most physicians have under their own eyes some examples of diatheses that jump one or more generations. The principal diseases and defects in which the influence of atavism has been traced are color-blindness, the hæmorrhagic diathesis, pseudo-hypertrophic paralysis with its allied diseases, and a large number of the neuroses. Lucas cites numerous facts of atavism for ocular infirmities. Pliny relates that in a family three persons were born with eyes covered with a membrane, and that this vice of conformation always skipped one generation (lib. vij, ch. xij).

Among the old and well-known cases of color-blindness is that reported by Dr. Earle, in which in addition to the usual limitation by atavism to alternate generations there was evidence of transmission from a great-grandfather to two great-grandsons, without the development of the peculiarity in the intermediate transmitters of the defect. There is another and more recently recorded case of the same kind in which two generations were skipped over, the transmission being effected through two females in the second generation, and thence onwards through three females in the third generation, to seven great-grandsons in the fourth generation.

Such extension is still more frequently observed in cases of hæmatophilia or the hæmorrhagic diathesis. In fact, its most important mode of propagation is not so much by the bleeders themselves as by their non-bleeder brothers and sisters. In the literature of hæmatophilia there are numerous instances of its indirect transmission. The "Appleton-Brown bleeder family" is known to American physicians. Investigation shows the "Tenna bleeders," in Switzerland, to be descended from a remote ancestor named Walther. The influence of atavism is distinctly traced in the insanity and blindness of George III, to his remote ancestor, Duke William, eight centuries back. Cases of deaf-mutism have been known to descend from male ancestors five generations back, and the atavistic transmission of a family defect to be handed down in a direct male line from a deaf-mute great-grandfather to a deaf-mute's great-grandson. Daly states that in 124 deaf-mutes in the Institution of deaf-mutes at Paris three cases of deafness proceeded from the grandfather. Vennet and Pnybonnieux cite analogous facts.

Dr. Matheson, of Ontario, who has examined the histories of 661 deaf-mute children, states that he is unable to find that any of the parents were, or are, deaf and dumb persons. A few of their grandparents, however, were mutes.

In the same manner that we may find numer-

ous examples of alternating heredity of mental disposition where family traditions are preserved, so may the instability of insanity pass on through one or more generations without its being developed. A case is related where a man had two wives, and by each wife one child—a boy by one and a girl by the other—yet both these children were alike nervously unstable, the father's mother having been a lunatic.

Many practitioners have noticed that gout, pulmonary tuberculosis, and scrofula may jump one or more generations. G. Seé has observed seven cases of the scrofulous diathesis which sprung from the grandparent had left the parents free. Other diseases, diathesis, neuroses, and even congenital and moral defects, the so-called criminality and forms of wickedness, may sometimes disappear for several generations, and crop out in a manner evidently owing to a reversionary anomaly. This is instanced in the history of prostitution, in the issues of courtesan mothers, and it is not necessary to refer to the Messalinas, Poppes, and Julias, of antiquity.

Hypospadians may be developed by what is termed "indirect atavism." On this point Dr. Lingard remarks that all breeders of cattle and other animals are familiar with this fact of the females throwing back, that is, reproducing, after impregnation by a second male, the peculiarities of some other male by whom they had previously been impregnated. That this is possible in the human female he thinks is proven by the following case: The third of six hypospadians died a few years after the birth of his three sons. His widow within eighteen months contracted a second marriage, the husband in this instance not being a hypospadian and having no history of any such defect in his family. By this marriage she had four sons, all hypospadians. Two of these hypospadic sons begat hypospadians in their turn. But one of these sons had three boys without any deficiency, although the eldest boy was a hypospadian. Sir Henry Holland mentions an instance in which four out of five of a family of children became blind at the age of 12; the only record of any preceding occurrence was an ancient tombstone, the figures and inscriptions on which showed that a mother and her children, members of two remote generations of the same family, had also been blind.

Facts like these merit confirmation by other facts rigorously observed; and it is to be regretted, in the interest of science, that families are averse from keeping a history of their diseases. It is to be hoped that Mr. Francis Galton's recent efforts in this direction may be successful in throwing further light on the manner in which these biological peculiarities, though interrupted or latent, are transmitted and yet return to visit the children of other generations.

In medicine reversionary anomalies are something

more than simple objects of curiosity. They have both philosophical and pathological value; and in the same manner that pathological anatomy teaches us a great deal about physiology, so we may learn much from studying the development of the brain and nervous systems both in a phylogenic and in an ontogenic or foetal way.

That form of reversion found in microcephalic idiots is highly instructive, and according to Carl Vogt, is one of the finest examples of reversion character to be found in the whole range of teratology. Besides, a correct observance and methodical study of what takes place in the minds of idiots enables us to determine many of the anatomical and physiological conditions upon which are based the manifestations of their intelligence.

I wish I could dwell longer on the phenomena of these important subjects, and that more particularly for the reason that they are scarcely mentioned even by the standard classical writers on physiology. I can only dismiss them by saying that the questions of atavism and of teratology are almost entirely new, and that the future will assign to them a much more important rôle than we have any idea of at the present.

THE FAILURE OF DR. J. B. THOMAS' TREATMENT OF URETHRAL STRICTURE BY ELECTROLYSIS.

BY ROBERT NEWMAN, M.D.,
OF NEW YORK.

My excuse for trespassing on the space of *THE JOURNAL*, is to correct any false impression that may have been created through the erroneous conclusions drawn by Dr. J. B. Thomas, of Pittsburgh (in *THE JOURNAL* of August 11), from an obvious misinterpretation of my report of the second hundred cases of urethral strictures treated by electrolysis.

Dr. Thomas unqualifiedly condemns treatment of urethral strictures by electrolysis, and urges upon us his limited experience and failure in a very meagre report of one case.

Is it sound logic to condemn an operation and method because a novice has made a failure in one or a few cases, when surgeons of undoubted standing from all parts of the world have reported hundreds of successful cases, endorsing, recognizing and establishing the method and operation as a success?

Dr. Thomas' statement is, that his patient, S. K. M., presented himself with cystitis and several strictures, for which he had been treated by many doctors, and in many ways. Dr. Thomas' treatment of him by gradual dilatation was a failure, because after having dilated the urethra to the size of a No. 24, French, on next presentation of the patient it was found that the urethra had

again contracted to No. 20. Electrolysis was then used four times. "Patient presented himself with an inflammation of the urethra *anterior to the first stricture so severe in character, etc.*" (Italics are mine). "The patient never returned."

Comments: Why was not the cystitis treated first, or at least simultaneously, with the stricture? It is not stated that the cystitis was treated, therefore we must believe that it was not. Certainly treatment of the cystitis was indicated, since spasm of an inflamed bladder may prevent any amelioration of the stricture, and especially will prevent the success of electrolysis.

The next question is, what caused the inflammation of the urethra anterior to the stricture? Was this inflammation the consequence of the treatment, or caused by an imprudence of the patient? I do not wonder the patient never returned. And I must protest against the condemnation of electrolysis in the treatment of urethral strictures, on such evidence.

Dr. Thomas next (doubtless for his own reasons) attempts so unfair an analysis of the statistics of my second hundred cases, published in *THE JOURNAL*, of Sept. 24, 1887, that I feel it my duty to reply: *First*, to correct his misstatements of my statistics. *Second*, to maintain my position in regard to urethral anatomy and surgery, in which Dr. Thomas and I differ widely.

Had the gentleman carefully read my papers he would not have made his paper a personal attack, and would have saved me the necessity of repetition to answer frivolous objections to the method of electrolysis.

Dr. Thomas though admitting No. 31, French, to be the calibre of the ordinary urethra, yet carps at cases presented in my statistics enlarged to No. 32, French, claiming that some must have been capable of enlargement to No. 40, French, closing with these words, "it is quite an imposition upon the credulity of the profession to state that such patients were, as we are led to believe, cured." I answer that no one is "led to believe," but Dr. Thomas misleads, by entirely ignoring my *definite* statement of the cure, as set forth. We may, and certainly do, differ about the size of the normal urethra, and as to what is meant by a cure. I have heretofore explained that I do not enlarge the urethra to a certain theoretical size, but mark in my statements "cured," when the patient feels and is well, passes a free, unobstructed stream, and is satisfied with his condition to such a degree that he objects to any further treatment and enlargement, and does not desire a larger-sized urethra. In some exceptional cases circumstances may alter the rules. As a rule I have tried to enlarge strictures to No. 28, French, but when the meatus would not admit an instrument larger than a No. 25, I certainly stopped, and did not cut the meatus. In many cases I found that no larger instrument than a No. 25 would pass the meatus. I do not

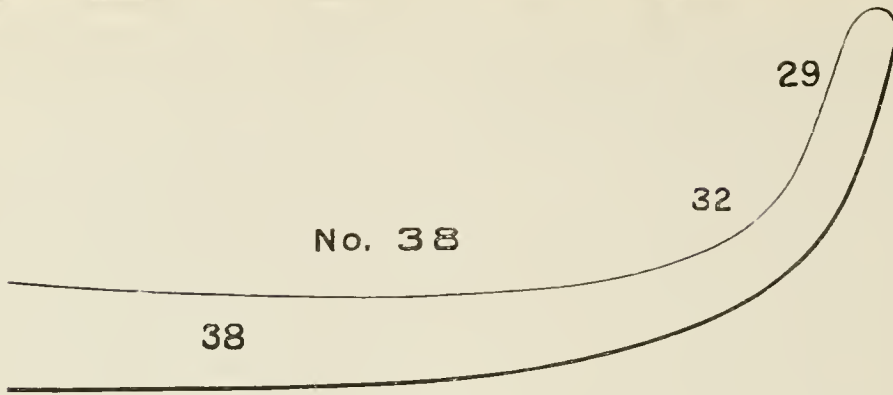


FIGURE 1.

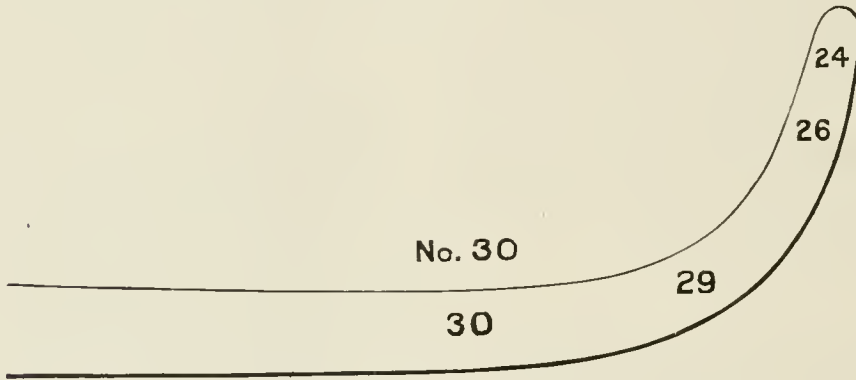


FIGURE 2.—Figs. 1 and 2, the ordinary Steel Sound.

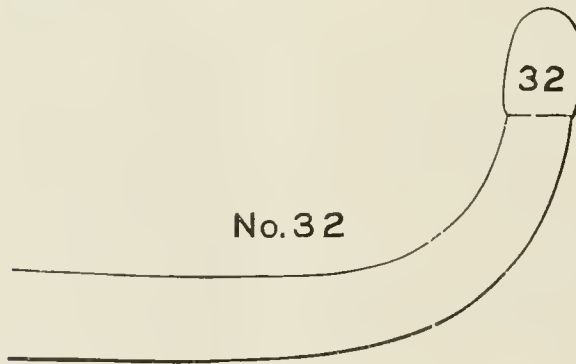


FIGURE 3.

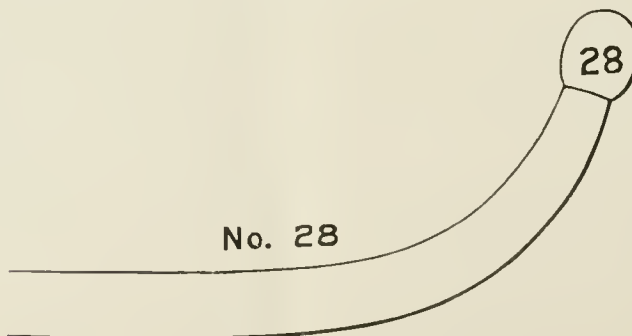


FIGURE 4.—Figs. 3 and 4, Newman's Electrodes.

intend to discuss theories and simply repeat facts that have been reported before, which Dr. Thomas wholly ignored, courteously adding "Twenty out of the hundred were never seen after treatment was discontinued." But he neglects to state that such cases were only recently treated, and the urethra enlarged to its maximum size of 28 and 32, French, and were so well that they did not need to be seen again. In most of the cases the patients were reëxamined, varying in the first hundred in point of time from three and a half to eleven years; in the second from one to five years. No relapse having occurred, viz., no contraction having taken place, meaning that the same sized sound was used in the reëxamination without electricity, as passed with electricity at the close of the treatment.

The usual steel sound tapers, so that the end which is used in entering the meatus is from two to nine numbers smaller than the stem of the instrument, while my electrodes have upon the end which is used in entering the meatus, an egg-shaped bulb, which is the full size given in my tables. It is easier to enter the urethra with the tapering instrument than with a six-sizes larger egg-shaped bulb. The accompanying drawing will illustrate it. Figures 1 and 2 represent the usual steel sounds; figures 3 and 4 my electrodes. It will be seen from careful measurement that a No. 38 is at its conical end only a No. 29, and in figure 2 we find that a No. 30 is at its conical end only No. 24; this tapering end making a difference of four and nine numbers respectively. It is easier to introduce a No. 38, when the conical end is equal to a No. 29, than to pass through the meatus my round, egg-shaped No. 32, as it is evidenced that my No. 32, French, electrode is nearly equal in size to the ordinary No. 40 sound. I have in my writings explained why my electrodes have the egg-shaped bulb for my treatment by electrolysis. My statistics show that in 33 per cent. of cases the stricture has been enlarged to No. 28, which is equal to about an ordinary No. 32 sound, and that no relapse has taken place; and such an enlargement has been made in some cases of strictures which were so small that no instrument could pass at first. From the experience and observation of many years I have come to the conclusion that the majority of urethras are normal if my No. 28 electrode can pass, that No. 30 is an exceptionally large urethra, and that No. 32 is almost always too large, and sometimes I regretted having used it.

The next mistake Dr. Thomas makes is in saying that some patients were discharged with their urethras admitting only a No. 14, French. This I deny. In my statistics No. 14 is mentioned twice, as follows:

No. 138.—A. N., Two months enlarged to No. 14, then disappeared, and two years later enlarged to No. 28. Reëxamined May, 1887, and found

No. 28. No relapse. Still under observation.

No. 183.—Dr. O. V. S. No instrument would pass. Improved very slowly to No. 14. Gout, etc., prevented his return.

Therefore, it will be seen that the first case was enlarged to No. 28, with no relapse; and that the second case was not reported as "cured," but only as "improved." The patient was unable to return for treatment, but it was a success as far as seen because the very aggravated case which admitted *no* instrument at first was made comfortable, and undoubtedly would have been cured if a chance had been given to do so, but the patient, a medical man, was disabled to such a degree that he could not travel the considerable distance from another State to my office.

Dr. Thomas next indulges in the statement that only nine out of the hundred cases were reëxamined after the lapse of two years from time of last treatment—but the learned gentleman omits to state (perhaps inadvertently?) that thirteen cases were seen after the lapse of three years, six cases after four years, etc., without the occurrence of a relapse and that all hundred cases reported were seen within a period of five years, some remaining still under treatment or observation when those statistics were sent to press. There was no claim that those cases were all cured; the record speaks for itself and shows how far they were improved, or a good reason given why they were not more improved.

The next omission of my analyzer is, that the patients of my first hundred cases mentioned had been under observation from three and a half to eleven years without a relapse, which makes an average time from six to seven years in each case. *All these facts* were stated plainly in my statistics, which Dr. Thomas had the kindness to analyze, and he will know best why he omitted all these facts, and tried to show that electrolysis is a "delusion and a snare," that it does no good, and that the improvement was due to dilatation, and after all, there were no strictures present, but only spasms! Gracious goodness! who will believe such logic? Not even the incredulous Thomas, who seems not to know that it is an established fact that Galvanism *vel* electrolysis *never* cures or overcomes a spasmodic stricture; on the contrary it may cause a spasm, which is so distinct and so powerful a contraction that no force, not even a one-horse power, will overcome. Besides, what operator of to-day will not be able to distinguish between a spasm and an organic stricture?

And now in regard to the insinuation as to dilatation *versus* electrolysis. I have clearly stated that the electrolysis enlarges the strictured part by galvanic chemical absorption; that when dilatation and even pressure will not pass a stricture, electrolysis will. This I have often demonstrated in the following manner: The electrode was introduced to the seat of the stricture, and the sur-

geons present were invited to press the instrument through the stricture. They tried to do so, and declared that they could not. Then and there, without the removal of the instrument, electrolysis was used, and in a few minutes, or less time, the same instrument passed the stricture. This has been demonstrated so often and can be proven by reliable witnesses, that the insinuation of dilatation becomes a *fata morgana*, like all the other views of Dr. Thomas.

Dr. Thomas does not state in his report of the single case, how he used the electrolysis, nor does he tell what his most approved apparatus was, and summing up uses the following language: "The remainder, we are told, were well, and we are to accept the assertion, I presume, on faith.

. If electrolysis in the treatment of urethral strictures is a delusion and a snare, I hope this paper will bring out the experience of those who can speak *ex cathedra* upon the subject, and if the consensus of opinion confirms my own, I then am glad that I have added my feeble effort to assist in pricking the bubble."

Candidly I do not envy any one who can use such language, and I leave it to my readers to surmise what animus has prompted him. My answer to his article is only intended to elicit the truth in regard to facts as they are. These facts of my statistics would be less strong if I were the only man who uses electrolysis successfully, but my method is recognized now all over the world by eminent surgeons who have given excellent records of success from America to Australia and Asia. Skeptics and gentlemen who formerly failed have been converted by facts and become successful operators. The literature on the subject, and hosts of successful operators, are mentioned in an editorial of the *New England Medical Monthly*, December, 1887, which is worthy of perusal, and proves beyond peradventure the success of electrolysis in the treatment of urethral stricture. More evidence comes almost daily from honest workers who formerly were skeptics, or failed at first, and at last relate their successes. Among the latter, as an instance worthy of notice, the valuable article of F. Swinford Edwards, F.R.C.S., Surgeon to the West London Hospital, and Surgeon to the out-patients of St. Peter's Hospital for fistula, etc., (*Medical Press and Circular*, April 11, 1888) from which I take the liberty to quote:

"When, some two and a half years ago, the treatment of urethral stricture by electrolysis was taken up by my friends, Dr. Stevenson and Mr. Bruce Clark, who were led to test its merits from the published reports of a brilliant series of cases by Dr. Newman, of New York, I determined to try it here at St. Peter's, and more especially in cases of resilient, or non-dilatable stricture, which in the usual course would be submitted to some cutting operation, attended possibly by risk of life, at all events necessitating detention in the

hospital for one or more weeks, a loss of time which is of great moment to many and most can ill afford There is yet another reason why I have selected only the severer forms of stricture in which to test the capabilities of this method. It is in order that there should be no room for an objection which I heard raised . . . In the table of cases before you most of the strictures were of long duration, and were multiple. Now these strictures were no myths, nor was their resilient character open to doubt, some of them having been in the hospital under my colleagues, whilst others had been under the care of well-known hospital surgeons. The number of strictures, their calibre and distance from the meatus, has been noted and the result of treatment given, I trust with impartiality. The

first I treated with the aid of my friend, Dr. Stevenson, and so struck was I with the result obtained that I hastened to give electrolysis a fair trial at this hospital. The patient had been under me two and a half years previously with three strictures which after a month's treatment I succeeded in dilating to No. 25. In February, 1886, he came to me again for stricture, but on this occasion I was unable to dilate the sub-pubic one by passing bougies. This then I conceived to be a good test case for the new treatment. For the result I have put down cured, as six months afterwards, although he had undergone no treatment in the meantime, I found no sign of stricture after carefully examining his urethra.

The advantages of electrolysis are many, viz.;

1. No confinement is necessary.
2. No risk of life.
3. No pain, and only sometimes slight discomfort.
4. No bleeding.
5. If unsuccessful it does not interfere with urethrotomy being undertaken forthwith.
6. and lastly, a cure (permanent) may follow, which is the rarest thing by any other method. In electrolysis, as far as I have seen and heard, no risk whatever is run, hence the opinion I have just expressed. I commend it, gentlemen, to your careful consideration."

I have much more proof at my disposal to show the success of electrolysis, but am unwilling to further intrude upon the valuable space of THE JOURNAL. I myself have used this method for nineteen years.

I do not wonder to hear sometimes of failures; as some men will fail in everything, others only in some particulars; and it has been shown that of all the students of medicine, after entering life as physicians, 25 to 45 per cent. are failures. Even "expert genito-urinary surgeons, of world-wide reputation," may fail with electrolysis when not electricians, or even careless in their operations, and even the purchase of an improved electric armamentarium does not make its possessor an elec-

trician. Such reports of failures do not undo or detract from the statistics of hundreds of cases of successes, they will still stand as truths everywhere. Electrolysis as a chemical action, etc., is infallible, though machines and operators may fail.

ON HEADACHES FROM OVERLOOKED CAUSES IN THE NASO-PHARYNX AND EARS.

Read in the Section on Practical Medicine at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY H. GRADLE, M.D.,
OF CHICAGO.

The present communication is intended to call attention to certain attacks of more or less persistent headache, the causes of which are often overlooked. These headaches, due to naso-pharyngeal or aural disorders of which the patient is scarcely conscious, are perhaps not common. But the fact that they do occur and can be more or less readily relieved seems to warrant their description. If the writer has seen a fair number of these somewhat exceptional cases, it is on account of their having been referred to him—often under the impression that their cause might be some refractive or other anomaly of the eyes.

Four types of such disturbances have been seen often enough to be classified as types.

1. The least frequent form of such headaches of occult origin is that of diffuse pain throughout the head, lasting from one to three or even five days. Such an attack may occur again after a variable length of time, or (more rarely) one attack may follow directly after another. Between those instances in which the patients complain of nothing but the headache, and the other extreme in which malaise, bone-ache, and slight rise of temperature characterize the disorder as an acute infection, all gradations can occur. In the last-named class of cases slight throat symptoms point out the hidden origin of the trouble, viz.: circumscribed follicular tonsillitis, or rather follicular angina. For the lesion may be either in the tonsil, or in a lymphatic follicle of the pharynx, or in the pharyngeal tonsil or its lateral expansions. It can be seen in the form of a whitish spot, located in a crypt and surrounded by a narrow congested zone. The more numerous these inflammatory foci the more marked are the febrile symptoms, and the more noticeable the local disturbances, while a single spot may not make itself felt in any way but by headache.

Although each attack is self-limited in course, its duration can be shortened by brushing with a strong solution of nitrate of silver.

2. A second more common type of headache is a dull occipital pain, lasting only perhaps some hours or days, but frequently returning. It is oc-

casioned by enlargement of the pharyngeal tonsil in the form of adenoid vegetations. It occurs especially during the congestion started by a fresh "cold," but at other times as well. I have met with it only in children. Any extensive glandular hypertrophy at the roof of the pharynx can scarcely be overlooked by an attentive physician. But a minor degree of enlargement in an otherwise healthy child may give rise to no symptoms but those of impeded nasal respiration at night, and may hence escape detection. The treatment is as simple as it is efficacious, viz.: operative removal of the pharyngeal tonsil.

3. Headaches due to hypertrophy of the nasal mucous membrane have come under my observation a limited number of times, but always in individuals either of a neurotic type or run down in health from overwork or worry. The pain was either frontal or diffuse, not very severe and not constant, but increased by excitement or mental work. The nasal lesion consisted in hypertrophy of the mucous membrane, especially on the middle turbinated bone, from the free edge of which the swollen membrane protruded as if it were too large for the bony frame. In some of the cases distinct polypi were present. Catarrhal symptoms, or at least catarrhal secretions, are not a necessary feature of this condition. Some of the patients, indeed, scarcely paid any attention to their nasal symptoms. I have generally found that where true hypertrophy of the mucous membrane predominates, the vascular irritability and permanent enlargement of the submucous cavernous tissue are not very marked. The nasal lesion can be cured by frequent spraying with nitrate of silver solution, and in proportion as the nose improves, the headaches diminish. Wherever the mucous membrane projects in polypoid form, it is of course the quickest way to remove it with the hot or cold snare.

I will not refer at present to the various forms of headache associated with the condition of irritable nose. For in that form of trouble in which there is more or less enlargement of the cavernous tissue and consequently marked—though it be temporary—obstruction of the nasal passages, the patient will himself call the attention of the physician to the state of his nose.

4. A fourth type of almost continuous headache I have met with in children, dependent on diminished patency of the Eustachian tubes. When the hearing is not impaired a fairly intelligent child may suffer from a feeling of fulness in the ears without ever complaining of its ears. Occasionally the obstruction of the Eustachian tube, and subsequent reduction of intra-tympanic pressure, gives rise to persistent headaches, which stop at once on inflating the middle ears. If the Eustachian obstruction be one-sided the child notices a difference between the two ears. But if both Eustachian tubes are involved without

marked impairment of hearing, the ear trouble may not be suspected, and it is only after inflation that the child feels that its ears are now "more natural" than they were before. Such slight Eustachian obstruction, and the headaches dependent thereon, can be readily cured in children by a few inflations, either by Pollitzer's method or, still better, by means of the Eustachian catheter. The naso-pharynx should, of course, receive due attention, in order to prevent a return of the Eustachian obstruction.

Central Music Hall, Chicago.

A SYSTEM OF FREE NURSING AS ORGANIZED IN PHILADELPHIA.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY JOSEPH PRICE, M.D.,
OF PHILADELPHIA.

I desire to call the attention of this Association to this system of free nursing because I regard it as a most valuable factor in the proper treatment of the sick poor; as a necessary lesson to the lower classes in cleanliness and the care of the sick; as the most efficient aid to the surgeon in non-paying practice, and because I hope that the idea suggested may prove to be of practical benefit to the profession in cities and towns not blessed with suitable institutions for the proper care of the sick poor.

The Visiting Nurse Society, of Philadelphia, was organized a little over two years ago by a few charitable ladies of this city for the purpose, as their charter reads, "of furnishing visiting nurses to those unable to secure skilled attendance in time of illness, to teach cleanliness and the proper care of the sick." It is supported by voluntary contributions and such small amounts as the patients may be able to pay, and its last report shows a remarkable amount of practical benevolence secured by the outlay of a very small sum of money. The Society in the beginning employed a trained nurse with one or two assistants, who were also pupils. Additional nurses were employed as necessity arose until the staff now consists of seven nurses and assistants and one maternity nurse whose work is confined to that specialty. Special nurses are provided for contagious diseases as they may be required, the regular staff not coming in contact with such cases. The Society was very fortunate in the selection of their head-nurse, who is a trained nurse of more than ordinary ability, both in practicing and teaching her profession.

The assistants are all young, healthy women, selected for their peculiar qualifications and carefully trained under the supervision of the head nurse. In cases demanding immediate operation

these nurses make all preparations at the shortest possible notice, viz.: thorough cleansing of the room and person of the patient, often supplying fresh body and bed linen, one or more nurses to assist in the operation, and one to care for the patient during the subsequent treatment. I have known these nurses to go in an attic or cellar in the heart of the slums of the city, the rooms reeking with filth and overrun with vermin. The patients, fit inhabitants of their homes, destitute of the bare necessities of life, not having even a receptacle in which to boil water, and often dependent on their neighbors for food and fuel. In a few hours the nurses have cleaned the room, supplied the necessary furniture and utensils and prepared the patient for an abdominal section. With such an organization at his command the physician or surgeon has no reason to fear undertaking any case, surgical or medical, at the homes of even the poorest of patients. In the clinic of the female department of the Philadelphia Dispensary, for years I did not attempt to do any of the abdominal work that constantly presented itself because of the lack of such a free system of trained nurses.

Since the organization of this Society we have done over ninety abdominal sections in the alleys and courts of this city, with only one death. And these were not selected cases, but were done because they were imperative. In addition, many general operations of more or less severity, but requiring skilled nursing, have been performed, and in every case the nurses of this Society have proved themselves equal to the occasion. During the past year the Society has cared for 90 surgical cases, out of a general list of 369, necessitating nearly 6000 visits. So far during this year they have attended nearly 200 cases, of which 50 per cent. were surgical.

The medical profession of Philadelphia has reason to congratulate itself in possessing such an efficient corps of assistants, and to wish for the extension of the benevolence to localities less favored.

CALCIFICATION OF THE CARDIAC VALVES. DEATH FROM CEREBRAL EMBOLUS.

Read before the Medical Society of the District of Columbia, April 11, 1888.

BY FREDERICK SOHON, M.D.,
OF WASHINGTON, D. C.

The calcification of the cardiac valves, shown in the specimen presented to-night at the request of several members who have already examined it, derives its interest not from the simple fact that it shows a diseased organ, but from the circumstances attending the patient's life and the manner of his death.

His family and friends give the same account

of the patient. He was perfectly healthy; never was confined to bed by illness; and, as far as could be ascertained, he never complained of any ailment, or any of the many incidental symptoms which usually accompany such a condition of the heart valves. He was white, aged 71 years, and a clerk by occupation. Physically he bore his age well, but he was rather absent-minded.

When seen at 6 o'clock on the evening he was attacked, he did not complain. Later he was found lying on the floor of his office, his position and surroundings pointing to a sudden attack. He had apparently fallen from his chair; his writing was stopped abruptly; and it was said he vomited his tobacco. When raised he seemed to look at the person with one eye, while the other quivered and wandered. He attempted to raise his arm, but was unable to do so. When spoken to he uttered disjointed sounds, as if trying to speak, but could not advance his tongue, although he swallowed medicine mechanically.

He was brought to the Emergency Hospital at 7:45 P.M., totally unconscious. Superficial circulation was below normal; the pulse quick and fairly strong, with a rate of 65; respiration labored and slow, without marked stertor, the noise emitted being of a sighing character. The breath was cool and odorless; the eyes fixed, and the pupils normal in size and non-responsive. The limbs responded to the prick of a pin. Muscular tremors were constant and lasting, and fluctuated in intensity. Auscultation of the chest, interfered with by the tremors, failed to disclose abnormalities in the sound of the heart or lungs. Urine was abundant, slightly alkaline, pale, and showed albumen. Attempts to vomit appeared to be made. The bowels were not evacuated previous to the administration of an enema. About two hours and a half after the patient was brought to the hospital there was a sudden and fatal exhaustion, the heart continuing to flutter after respiration ceased.

The post-mortem examination was made twelve hours after death. Rigidity was still strong. The body was found to be well nourished, and rather muscular for its age. The pleura was normal; the lungs normal in structure, crepitating all over, the section showing congestion and exuding blood. The stomach was empty and its veins turgid; the liver enlarged and congested, as were all the abdominal organs. The kidneys were about $3\frac{1}{4} \times 1\frac{1}{4}$ inches, red, congested, and moderately hard; the capsule stripped easily, showing the exposed surface smooth; the renal arteries were tough and atheromatous. The right kidney had a small cyst. The brain dura was normal, the sinuses overfilled with blood; the left lateral ventricle filled with dark soft coagula, supposed, after careful search, to be due to laceration of that side of the brain by the chisel; the other ventricles contained neither blood nor appreciable

amount of fluid. The brain was slightly pale, but of good consistency; the arteries at the base, including the vertebral, were thickly studded with atheromatous patches (specimen). At the first division of the right posterior cerebral a hard freely movable plug was found. The shock resulting from the sudden interference to the circulation by this plug, in an already poorly nourished brain, was credited as the cause of death.

The heart presented as a specimen weighs 11 ozs. The aortic valves were found barely separated, and immovable either way, these and the mitral allowing a free backward flow of water. The valves are now rigid and covered with large friable warty calcifications. The mitral valves are hard, the aortic curtain being fully $\frac{3}{8}$ of an inch thick, and there are inflammatory patches at their junction. The aorta and coronary openings present atheromatous patches. The left ventricle is not dilated, and only $\frac{1}{2}$ inch in thickness. The auricle is dilated, its walls normal, and the lining opaque and contracted. Neither cavity of the right side is hypertrophied, though the tricuspid valve is slightly thickened.

It is strange that these changes in the heart were not accompanied by any adequate compensation, and yet did not occasion any disorder in the patient's system, so as to materially affect his health, or manifest itself by any of its many symptoms.

MEDICAL PROGRESS.

RADICAL CURE OF INGUINAL HERNIA.—At the late congress of Italian surgeons, March, 1888, PROF. BASSINI described a new method of treatment in inguinal hernia, which he had successfully practiced in 102 cases. He asserts that Wood's and Zerny's operations, which have for their object the closure of the canal by cicatricial tissue, expose the patient to recurrences of the hernia unless a truss is constantly worn. This does not occur in his operation, which restores the inguinal canal to its normal conformation. His procedure is as follows: He lays bare the aponeurosis of the external oblique muscle, and cuts through it from the external ring to the internal. The neck of the hernial sac is then separated from the spermatic cord and tied or sutured at the situation of the internal ring; it is next divided and the ligated part returned to the abdominal cavity. After pushing aside the spermatic cord, the posterior margin of Poupart's ligament is exposed, and the musculo-aponeurotic layer consisting of the internal oblique and transversalis muscles, and the transversalis fascia dissected off from the subserous stratum in such manner that it can be brought in close apposition to the posterior margin of Poupart's ligament.

These parts are united by sutures for a distance of five to seven centimeters, commencing externally at the ileopubic tubercle and extending to the place where the spermatic cord enters the abdominal cavity. The cord is next replaced, and the aponeurosis of the external oblique sewn up, an opening being left that is large enough for the cord to pass through without compression. The cutaneous wound is then closed after providing for drainage. This operation restores the inguinal canal to its natural condition; the internal opening and the posterior wall are new-formed, while the external ring is merely narrowed. Moreover, the canal is restored to its normal oblique position, so that the posterior wall which is pressed forward by the intra-abdominal pressure is supported by the anterior, and the canal thus permanently closed. Another advantage claimed for Bassini's method is that the new-formed posterior wall, which is composed of muscle and aponeurosis is permanent, and will not disappear like the cicatricial plug in Wood's operation. Of the author's 102 cases, 95 were reducible and 7 strangulated herniæ; in 98 the hernia was complete oblique, and in four complete direct.

The following conclusions are formulated:

1. The method is absolutely without danger.
2. It effects a radical cure in a short space of time.
3. It obviates the necessity of wearing a truss, as after the other operative procedures.—*International Journal of Surgery and Antiseptics*, July, 1888.

COMMUNICABILITY OF ACTINOMYCOSIS.—Since Dr. Israel first described actinomycosis in 1878, there have been, according to Dr. BARACZ, of Lemberg, 103 cases published. Dr. Baracz himself has met with two cases which apparently show that there is a possibility of the affection being communicated from one person to another. The first to be affected was a livery-stable keeper. His horses were all, however, in good health, and he had not had charge of any strange horses. When seen by Dr. Baracz on January 9, 1887, a tumor was found on the external surface of the left ramus of the lower jaw; it was about the size of a walnut, fluctuating, easily movable over the bone, and presented an indurated border; the skin over it was inflamed; the teeth were much decayed and very black. Two incisions were made into the tumor, and it was proposed to scrape it thoroughly out. To this, however, the patient refused his consent. The contents on microscopical examination proved to be, as was suspected from the first, of an actinomycotic nature. The wounds were dressed with iodoform, and had quite healed on March 3. On July 15, the *fiancée* of the former patient presented herself with an abscess of the alveolar process of the left jaw. Behind the abscess was a somewhat tender,

hard tumor, the size of a hen's egg, but flattened, intimately connected with the inferior maxilla. Many of the teeth were gone, and those that remained were very defective. On opening the abscess, half a teaspoonful of pus was obtained, from the examination of which a diagnosis of actinomycosis was established. The wound healed readily. Two months later, a second abscess, the size of a hazel-nut, was found in the gum over the first molar, which was carious. This, as the patient refused to allow it to be opened, broke and ultimately healed without trouble. As there was no microscopical examination of the contents of the second abscess in the case of the young woman, it cannot be regarded as certain that this was of a parasitic nature.—*Lancet*, July 28, 1888.

RESECTION OF THE OPTIC NERVE INSTEAD OF ABLATION OF THE EYEBALL.—DR. CHARLES BELL TAYLOR says: Notwithstanding the great advantages obtained by the substitution of enucleation for the ancient and formidable practice of scooping out the whole contents of the orbit, it is clearly impossible to accept this operation as a final solution of the difficult problem of how to deal with a lost eye. The operation of exenteration, the substitution of a glass vitreous chamber, and the late Mr. Streatfield's proposal to destroy the whole conjunctival surface in certain cases after enucleation, is evidence that modern surgeons are not satisfied with the existing state of things. Atrophy of the orbit and neighboring tissue frequently follows enucleation; the glass eye excites traumatic conjunctivitis, and if the artificial substitute is withheld the orbit retracts. To a working-man the annual expense is onerous, the glass eye a perpetual annoyance, and an empty orbit a constant receptacle of foreign bodies. Nevertheless, when the eye is crushed, contains a foreign body or neoplastic growth, or belongs to a patient who cannot be trusted to take care of himself, or to return if threatened with sympathetic ophthalmia, it is best to remove it. If, however, although sightless, the eye is a good-looking organ, and only affected with neuralgia or recurrent inflammation, or belongs to a patient who refuses enucleation, it is best to excise a portion of the optic nerve, which is quite as effectual as enucleation, and has the great advantage that it does not sacrifice the eyeball, or render an artificial eye necessary.

In thirty-one cases the author has obtained the most gratifying results from this operation. Motion in all directions is perfect, and, in fact, in some of them it is difficult to tell which eye has been done.—*Brit. Med. Jour.*, July 28, 1888.

AMYLENE HYDRATE.—DR. F. GIRTLE, assistant in the Medical Poliklinik at Königsberg, gives additional details on the influence of amylene hy-

drate, the new hypnotic introduced by von Mering. He had tried the drug in sixty-one cases of various diseases, with results which fully confirmed those of von Mering and Sacharschmidt. He administered it in the following forms: 1. R. Amylene hydrate, 7 grams; distilled water, 40 grams; syr. rubi idæi (raspberry), 30 grams. Sig. Half the quantity to be taken in the evening. 2. R. amylene hydrate, 7 grams; aq. menthæ piperitæ, 40 grams; syr. rubi idæi, 30 grams; olei menthæ piperitæ gutt. 1. Sig. One-half the quantity to be taken in the evening. In the case of children the remedy was given in the form of pills or in gelatine capsules as recommended by von Mering. The average dose for adults was 3.5 grams; sometimes smaller doses were sufficient, but at certain times larger doses, such as 6 grams, had to be resorted to. In the case of children under 1 year of age the dose was 2 decigrams, and in older ones 6 decigrams. In almost all cases the desired effect was obtained; deep sleep lasting the whole night supervened in some irritable cases; in other instances, however, the sleep only lasted some hours. In a few cases headache and slight oppression were complained of, but there was no vomiting. The drug was tried in chronic alcoholism, softening of the brain, chronic morphinism, epilepsy in which the night's rest was broken by frequent attacks of cramp; in tuberculosis, gastric ulcer, rheumatism, and tabes; the lancinating pains in the latter disease diminished under the influence of amylene hydrate. Dr. Girtler prefers the drug to chloral hydrate, as it has no injurious effect on the heart.—*Berliner Klinische Wochenschrift*, No. 6, 1888.

CANCER AND TUBERCULOSIS.—LUBARSCII has written a paper in *Virchow's Archiv*, February, 1888, on "Primary Cancer of the Ileum," in which he comments on the simultaneous presence of cancer and tuberculosis. He has examined two cases of cancer of the ileum, which he has carefully compared with œdematous polypoid tumors of the small intestine. He comes to the conclusion that cylindroma of the intestine may be truly carcinomatous; that primary cancer of the ileum arises from Lieberkühn's follicles; and that in epithelial new growths, not otherwise cancerous, ingrowths of epithelial cells, atypical in that they bear no basement membrane, are sometimes to be detected. Lubarsch then reviews at great length the various theories on the possible relations of cancer and tubercle. He believes that their precise relation is very difficult to define in any practical manner; for the different ages at which each disease appears make their coincidence very rare. The theory that cancer of any particular organ predisposes it to tubercle, as Lebert asserted in respect to the œsophagus, is not proved. In cancerous subjects, as in phthisis, acute forms of infections are relatively rarer than in persons

free from cancer. Tuberculous affections may, it cannot be denied, favor the development of a cancer, just as carcinoma frequently appears on an area exposed to chronic irritation. Both of Lubarsch's cases were middle-aged men, and in both "peribronchitis caseosa" and other evidences of tubercle were detected after death.

INFLUENCE OF NUTRITION ON MOTHER'S MILK.—ZALESKI found that a portion of the milk taken from a wet-nurse contained 6 per cent. of fat—double the usual quantity. The child suckled by this nurse was in a very bad state of nutrition, suffered from diarrhœa and loss of weight, and the milk given it was scarcely digestible. Zaleski believed that these disturbances were due to too great concentration of the milk, the nurse being fattened by a too free use of beer and too little exercise. A change of diet, moderate use of meat, dilution of the beer with water, and abundant exercise in the open air led to a diminution of the quantity of fat in the milk and an increase in milk-sugar. From that time the child began to improve, and thrived well. The conclusions drawn from this case, and from experiments upon cows and other animals, were:

1. Woman's milk which is very rich in fat can have a very harmful effect upon the nutrition of a child who feeds upon it.
2. A diet which is composed almost exclusively of albuminous elements will increase to a perceptible degree the fat in woman's milk, diminish the quantity of milk-sugar, and has a bad effect in other ways; a similar result may follow the use of alcoholic liquors.
3. By proper diet and nutriment a desired condition of the milk which is indispensable for the proper nutrition of the child can be obtained within certain limits.
4. The influence of the general condition upon the milk supply is the same in human beings as in animals.
5. The fat in milk is probably obtained, to a considerable extent, either directly or indirectly, from albuminous foods.—*Centralbl. für Gynäk.*, May 26, 1888.

INFLUENCE OF DRUGS TAKEN BY NURSES UPON NURSINGS.—FEHLING has made investigations upon this subject as follows:

Soluble substances pass from the blood into the milk. Sodium salicylate became dangerous to an infant after its nurse had taken 45 grains; iodide of potassium may be given in daily doses of 3 grains without injury; it was found in the milk twenty-four hours after the nurse ceased to take it. Potassium ferrocyanide does not pass readily into the milk.

Iodoform, even when applied externally to the mother, passes very readily into the blood, and affects the child more powerfully than when it is

applied to lesions upon the child. Mercurials given to the mother do not affect the child readily.

Regarding narcotics, twenty-five drops of tincture of opium (German Phar.) did not affect the child; he concludes that from one-tenth to three-tenths of a grain of morphia may be given at a dose with safety to the child; from 20 to 40 grains of chloral may be likewise given. If the breath was withheld for one and a half or two hours after these doses no effects on the child were observed. Atropia affects the child very readily and powerfully.

Fehling experimented with citric acid, mineral acids and vinegar, finding that their use does not affect the child; the normal alkalinity of the milk remains undisturbed. No restriction in this direction should be put on mothers' diet.

As to the influence of fever upon the milk, the septic-fevers counter-indicate nursing, because the milk ducts and secretion are infected with micrococci. The child should be at once taken from the breast in these cases. In non-septic fevers the child should nurse so long as the secretion remains, and simple means should be used to abate the mother's fever.—*Medical Press*, May 9, 1888.

THE EXPLORING NEEDLE IN DIAGNOSIS.—DR. HERMANN M. BIGGS, at the close of a paper on the accidents incidental to the use of the exploring needle in diagnosis, draws the following conclusions:

1. The employment of the exploring needle is not infrequently attended by considerable danger, and a number of deaths have directly resulted from its use.

2. The indiscriminate, careless, and routine resort to exploration with a needle should be condemned. This procedure should not be resorted to without careful consideration of the conditions obtaining in each case, and the results that may follow the puncture. The site for the puncture should be thoughtfully chosen, the puncture carefully made with complete antiseptic precautions, and the smallest needle that will answer the purpose employed.

3. The puncture of collections of fluids with tense walls in relation with serous surfaces should be, as far as possible, avoided, and, if it is resorted to, sufficient fluid should be withdrawn to relieve the tension upon the walls of the sac. In many cases certainly an exploratory operation would be attended by less danger.

4. In the introduction of the needle into deeply seated infectious matter the nature of the intervening tissue should be carefully considered.

5. The needle before use should always be thoroughly disinfected, preferably by heating in the flame of an alcohol lamp or a Bunsen burner.

6. The skin where the puncture is to be made

should be rendered thoroughly aseptic by first scrubbing with soap and water, and then washing with an antiseptic solution.

7. The dangers attending the use of this valuable adjuvant in diagnosis should not in the slightest interfere with its employment in properly selected cases, where due precautions are observed as to its use.—*N. Y. Medical Journal*, August 18, 1888.

OINTMENT OF THE NITRATE OF MERCURY IN BOILS AND FELONS.—During the last six years DR. ROBERT KENNER has used successfully this preparation as an abortifacient of boils and felons. He claims that through its agency he has been able to abort nearly all cases that came under his care before suppuration had commenced. The application of the ointment is not painful, and in about twelve hours is followed by a peculiar drawing sensation, after which there is a complete cessation of all uneasiness. In treating felons the entire finger should be covered with a coating of the ointment about one-eighth of an inch thick, and then enveloped in a piece of thick sticking-plaster. This dressing is allowed to remain for twenty-four hours, after which time further treatment is unnecessary.—*Therap. Gaz.*, June, 1888.

MASSAGE IN EMBOLISM OF THE RETINAL ARTERY.—At the meeting of the Ophthalmological Society of the United Kingdom, on July 6, DR. MILES related the case of a young woman, aged twenty-one, who perceived a blank over a portion of the upper segment of her right visual field. Within an hour she was at the Manchester Eye Hospital. Her right visual field was found contracted above. Seen under direct ophthalmoscopic examination, the fundus showed a blocked lower retinal artery, the clot, which was colorless, being visible, and extending from the entrance on the disc to the first bifurcation; the plugged vessel looked as if it had been stuffed with cotton wool. The retina was slightly oedematous. Massage was tried, and the clot disappeared, sight at once improved, and the vessel was seen well filled.—*British Med. Jour.*, July 21, 1888.

CHRONIC ABSCESS IN THE STUMP AFTER TONSILLOMY.—NOQUET reports this rare case: The patient was a married woman, æt. 20 years. In infancy she had been the subject of hypertrophy of the tonsils. The right tonsil was removed when the patient was six years old, and the left about six months before she came under treatment. The left stump was very red and markedly hypertrophied at the border of the palatine folds, and on pressure pus exuded from a fistula. About a teaspoonful of pus was evacuated by an incision with the galvano-cautery, and after several cauterizations the patient was cured.—*Revue Mens. de Laryngologie*, July, 1888.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, SEPTEMBER 8, 1888.

THE MEDICAL EXAMINING BOARD OF VIRGINIA.

At the examinations held by this Board in April, 1888, there were 34 applicants, 1 of whom withdrew. Of the remaining 33, 26 passed and 7 were rejected—22.22 per cent. Of the 33 applicants 30 were graduates; of the 7 rejected all were graduates; of the 3 undergraduates all passed. Three colored students applied, and 2 passed. The 30 graduates came from 11 colleges; from 6 colleges all the applicants, 21 in number, passed; from 5 colleges 7 out of 12 applicants—58.33 per cent.—were rejected.

The last report of the Virginia Examining Board gives a list of the colleges from which graduates have come before it for examination. The table shows that since the organization of the Board, January 1, 1885, there have been 223 applicants in all, 49 being rejected—21.97 per cent. Of the applicants 212 were graduates; 45 were rejected—21.69 per cent. There were 11 non-graduate applicants, 4 of whom were rejected—36.36 per cent.—and 2 had not completed their examinations at the time of the report. In the table are given the names of 27 colleges from which applicants have come before the Board; excluding the University of Heidelberg, we have 26 American colleges; 13 of these sent 51 applicants, all of whom passed; 13 others sent 156 applicants, with an average of 34.73 per cent. of each rejected—more than one-third.

Following is the rejected-percentage list: Medical College of Virginia, 54 applicants, 7 rejected, 12.98 per cent.; University of Maryland, 33, rejected 8, 24.24 per cent.; College of Physicians and Surgeons of Baltimore, 33, 10 rejected, 30.3 per cent.; Jefferson Medical College, 12, rejected 3, 25 per cent.; Bellevue Hospital Medical College and the University of the City of New York, 5 each, rejected 1 each, 20 per cent.; Vanderbilt University, 3, 1 rejected, 33.33 per cent.; Medical Department of Howard University, 7, rejected 6, 85.71 per cent.; Louisville Medical College and Detroit Medical College, 2 each, 1 each rejected, 50 per cent.; Columbus Medical College, 2, Medico-Chirurgical College of Philadelphia, 3, and Cincinnati Medical College, 1, rejected *all*, 100 per cent. And there are still other interesting figures to be had from the table. Of the 45 rejected graduates, 21, or 46.66 per cent. (from 8 colleges) applied for a second examination; of these 9, or 42.85 per cent., failed a second time. We thus see that the Board held 228 examinations of graduates of American colleges, and rejected 23.68 per cent. Can any one wish for better proof that the colleges (as a class) are not regulating themselves, but need regulation, and a great deal of it.

The percentage of graduates to matriculates in American colleges now averages 30.5. The average for the colleges whose students failed before the Virginia Board is 34.12—3.62 per cent. higher than the general average; for the colleges whose students passed, 28.53—1.97 per cent. lower than average. The colleges whose graduates failed, then, graduate 5.59 per cent. more of their matriculates than the colleges whose graduates passed. Colleges whose graduates failed average 2.07 courses of 22.44 weeks each; others 2.61 courses of 25.84 weeks each. Average for American courses is 24.9 weeks; average course of colleges whose candidates failed is 2.46 weeks less—of others .14 week more, or 3.46 weeks longer than the course of the other colleges.

By leaving out of consideration the colleges from which not more than one candidate came, we have: Colleges all of whose graduates passed, 7; colleges some of whose graduates failed, 12; number of students from former 42; from others 142. Of the last 98 passed, 44 rejected—30.92 per cent.; applied a second time 21, rejected second time 9—42.85 per cent. From these colleges, then, 163 applied, 53 rejected—32.51 per cent.

More specifically, 100 per cent. of second applicants from 4 colleges—total of 7; 100 per cent. failed from 2 colleges—total of 6, 100 and 50 per cent. having previously failed from these colleges; 33.33 and 40 per cent. of second applicant failed from two other colleges. Of the colleges sending more than 1 candidate, graduates of which failed, the per cent. of graduates to matriculates is 34.4; others (7) 28.57—average for United States 30.9.

Counting first and second applicants, we see that 228 graduates were examined, and 54 failed—23.68 per cent. From 1877 to 1887 inclusive there were 36,097 graduates from medical colleges of the United States. They held documents that are considered as entitling to practice in the majority of our States and Territories. But according to the above figures, if these 36,097 had gone before an efficient examining board, 8,300 *would have been rejected!* About 1,400 more than there are physicians in Illinois now! It is appalling to think that in ten years more than twice as many incompetents have been graduated from the medical schools in the United States as there have been graduates during any one of these ten years, except the session of 1881-82, when there were 4,450 graduates. Yet we are told: "Let the medical colleges alone; they will regulate themselves;" "Medical legislation is class legislation;" "It is not in accordance with the spirit of our National institutions and precedents to meddle in these matters." "Supply and demand will regulate the matter;" and other things that are disapproved by the time they are uttered.

It is a matter of regret that the report received from the North Carolina Board of Medical Examiners, a *résumé* of which was published in THE JOURNAL last week, did not contain a table similar to that given in the Virginia report, for it is probable that some interesting information could be obtained from it. A table of this kind, compiled from the reports of all the examining boards in the country, and the reports of State Boards of Health that hold the licensing power, would furnish some interesting reading both for the general public and for the profession, though it would doubtless be distasteful to some professors. It should be borne in mind that both in North Carolina and Virginia the examiners do not know the student or applicant except by the number given by the secretary; so there can be no charge of favoritism. In States in which there are no med-

ical practice acts, nor examining boards, or inefficient ones, we cannot think of any argument that should be more potent with legislators than one of these tables.

It is proper to inquire how the Medical Examining Board of Virginia stands with the profession of the State. There are two medical schools in Virginia; the University, and the Medical College of Virginia. Since the organization of the Board 28 students of the former have come before it, and all passed; 54 students of the latter have applied, and 87.02 per cent. passed; add to this number 3 that applied a second time, all of whom passed, and we have 57 applicants, 50 passed, which raises the percentage to 87.71. When the first movement was made towards securing the present legislative enactments, the Faculties of the University of Virginia and of the Medical College of Virginia heartily endorsed it. But after the Board was organized and began to work with that thoroughness and impartiality that has always characterized its work, oxen began to be gored, though the Board did not know whose they were till the Secretary made his report *after* the results of the examinations had been determined. During the last session of the Virginia Legislature a petition was sent in from the students of the Medical College of Virginia, asking that the graduates of Virginia schools be exempt from the examination before the Board, and be entitled to a license on their diplomas. On January 11, 1888, a majority of the members of the Faculty of this college, and a number of the students, appeared before a committee of the Legislature, to express their entire belief in and approval of examining boards in the abstract, and their sincere disapproval of any examination of the graduates of the Medical College of Virginia. The Faculty of the University of Virginia, however, and its students, and the medical profession of the State of Virginia continue to approve of the Board both in the abstract and the particular concrete.

The petition sent to the Legislature by the students of the Medical College of Virginia is worthy of some notice, as showing to what lengths misguided people can go, and what statements they can make. A round dozen "reasons" were given why the Legislature should grant the petition: *First*, it was stated that the students of Virginia colleges pay more for their tuition than they would have to pay elsewhere; which is untrue, as can

be seen by comparing college catalogues. *Second*, they claimed that the Board was hostile to their institution, notwithstanding the fact that members of the Board know the applicant by number only. *Third*, they cite that some of the States (New York, Maryland, Pennsylvania, Ohio, etc.) have rigid laws in regard to medical practice, but *protect their own medical colleges* by recognizing the diplomas of these colleges as a sufficient guaranty of the graduate's fitness to practice medicine. This is a new application of the much-mooted question of protection. But the statement with regard to the laws in these States is only partly true, and what is true is shown to be wrong in principle and application by the rejected-percentage list given. *Fourth*, it was stated that the Virginia Board was selected at random; it is not and has never been. It is selected by the Medical Society of Virginia, an organization representing the best element of the profession in the State, and more than one-half the profession in the State. The *fifth* "reason" needs no answer. It reads: "The sole object of the law regulating the practice of medicine and surgery is a selfish one—*i. e.*, to prevent competition. Medicine is studied and practiced for the sake of profit and gain, and *not* for 'sweet charity's sake.' . . . Competition is the life of this, as well as of other trades." Sober reason is utterly lost on medical students that can argue in this manner. The *sixth* and *seventh* reasons are that the examinations are a tax on the poor student; but the Board meets when the colleges close, and the fee for the examination is only \$5.

The *eighth*, *ninth*, and *tenth* reasons were that the facilities of the Virginia schools for teaching are excellent, that the graduates of the Virginia colleges have invariably distinguished themselves (until they fell into the hands of the State Board), and that the failure to pass the Board's examination casts a stigma upon the graduate, while to pass it does him no good. Grant all this for a moment; but the following answers by *graduates* before the Virginia Board are sufficient to show that though a stigma may be put upon a graduate when he fails to pass, the people of the State are protected from an incompetent practitioner:

Describe the larynx. *Ans.* The larynx is composed of cartilage. The œsophagus passes through the larynx.

What is the function of the liver? *Ans.* Do not know.

Give tests for arsenic. *Ans.* Sulphuretted hydrogen is one. Don't know rest.

Give test for mercury. *Ans.* Do not remember.

Give dose of tartar emetic. *Ans.* Ten grains.

Give dose of sulphate of atropia. *Ans.* Hypodermically, 10 grains; by mouth 60 grains.

Give dose of corrosive sublimate. *Ans.* One grain.

How would you treat placenta prævia? *Ans.* I don't know what it is.

Give dose of powdered cantharides. *Ans.* Forty grains.

What is the source of iodine? *Ans.* It is dug out of the earth in blocks like iron.

Describe dengue or break-bone fever. *Ans.* By four applicants: A fever that comes on soon after the bones are broken. By one applicant: The patient should be cautioned against moving, for fear the bones should break.

Describe the peritoneum. *Ans.* It is a serious membrane lining the belly, and extending into the chest, covering the heart and lungs.

Admitting only for a moment, and for the sake of argument, that medicine is a trade, as that committee of students would have had the Legislature believe, every one must admit that a tradesman should at least know the names of the tools with which he is to work, and the names, functions, and diseases of the mechanism upon which he is to exercise his trade. Otherwise, he is unfit to be in the trade.

So far as we can learn, the only medical men in Virginia that are opposed to the present law and the Board of Medical Examiners, are those composing the Faculty of the Medical College of Virginia. Doubtless they are warmly supported by the Faculties of some colleges outside the State, as given above. Had not the State Medical Society and the majority of the physicians of the State endorsed the Board and the law creating it, we may be sure that no Legislature would have ever created it. The Board is doing good work, and is impartial in its work; the colleges that are placed in a bad light by the examination statistics of the Board have it in their power to mend matters by doing better work.

MODERN ANTIPYRETICS IN REMITTENT FEVER.

SURGEON P. O. W. HALLEY, of the Indian Medical Service, records some cases, in the *Indian Medical Gazette* of June, that well illustrate the action of some of the recently introduced antipyretics. These cases were nearly all of the adynamic type, and were treated throughout with small doses of tincture of digitalis as a cardiac tonic, and with quinine during the remissions, and stimulants as required. In one case antifebrin pro-

duced a very marked fall of temperature twice, of 5.2° and 4.4° respectively, without causing symptoms of depression otherwise than a slight slowing of the pulse and reduction of pulse-tension. When given in brandy it produced very little depressing effect, and Mr. Halley says that a dose of 7 grains is usually effectual. In a second case, severe and complicated with pneumonia, antifebrin caused less depression than antipyrin, and lowered the temperature as effectually. The average time taken by the antifebrin to lower the temperature was from one to two hours. The effect on the skin was greater than that of antipyrin. The temperature remained down for from 5 or 6 to 8 hours. The urine was slightly increased on one or two occasions, but not markedly so. Neither antifebrin nor antipyrin caused any vomiting nor collapse in these cases.

In summing up as to the value of the modern antipyretics in remittent fever Mr. Halley says that kairin is undoubtedly inferior to the others, inasmuch as in large doses it may produce dangerous depression, and if given in small doses its effects are uncertain. Furthermore, it seems to be pretty clear that part of its action is to cause disintegration of the blood-discs, and it is therefore evidently unfit for continual use. Antifebrin is doubtless superior to antipyrin, both as regards its power of reducing temperature, and the absence of after-effects. Mr. Halley thinks that the routine use of antipyrin in adynamic fevers, especially the severer remittents and typhoid fever, in which there is such proneness to degeneration of the cardiac muscle, must be fraught with great danger, but if given only when the temperature exceeds a certain height it is undoubtedly a useful drug, more especially if the cardiac muscle be kept in tone with small doses of digitalis or strophanthus throughout the disease. When it becomes necessary to use one of these drugs almost continually, he thinks antifebrin is superior to antipyrin for the reasons given.

EDITORIAL NOTES.

PRISON REFORM is needed in the Northern Indiana Prison at Michigan City, if there be any truth in some reports from this place printed in the newspapers last week. An ex-convict, just released, tells a terrible story of suffering, abuse in, and mismanagement of the institution. He

says that the pork furnished the prisoners during the past summer was frequently so badly spoiled that they could not eat it. According to his story medical assistance is not promptly rendered in cases of sickness, one prisoner, who had been in prison for seven years, and who was to have been released in a short time, having died of simple neglect, being found dead on the stone flagging of his cell after having called in vain for assistance. "The severest punishment from which the convict suffers," says the ex-convict, "is hunger and filth." Statements of this kind demand the fullest investigation by the authorities, and if true, some one should be punished and reform instituted.

A MYSTERIOUS DISEASE has appeared in Rogers City, Mich., according to recent dispatches, which say that two weeks ago a mysterious malady attacked several persons in that village, and its ravages have grown to such proportions that a panic has seized upon the people. The disease somewhat resembles cholera, and attacks all classes without regard to the conditions which surround them. The bowels are first affected. This is followed by a black vomit, and ordinarily death ensues in thirty-six hours. There have been as many as nine deaths in a single day, and the disease is spreading. Physicians are wholly at a loss as to how to cope with it, the usual cholera remedies having no appreciable effect. The authorities will have an investigating committee from the University of Michigan look into the cause of the epidemic.

KALA-AZAR is the name of a dread malarious fever that occurs in the districts of Goalpara and the Garo Hills of the Province of Assam. In the last Administration Report it is shown that this disease was the cause of nine out of twelve suicides, and the Chief Commissioner confesses with regret that all that human skill can do seems to be useless in combatting this dreadful disease, and the Deputy Commissioner says: "The miserable lot of a sufferer from kala-azar can hardly be surpassed under any conditions of time or place; treated as the possessor of a contagious and infectious disease, a drone in spite of his will, and his existence as such resented; growing weaker and weaker with each succeeding month, in constant pain, it is not to be surprised that the wretched creature should seek his end."

DEGREES IN SANITARY SCIENCE.—In the United Kingdom the opinion is becoming more prevalent and popular that medical officers of health should hold degrees in sanitary science, in addition to their medical degrees. The University of Madras has now instituted a degree in sanitary science. The candidate for the degree must have passed the examination for the degree of M.B. and C.M., or L.M.S., and must present certificates of having attended courses in hygiene (not less than forty lectures), general pathology (not less than forty lectures), analytical chemistry (practical course of not less than six months) and one course of sanitary engineering. The candidates are examined in organic, inorganic, and practical chemistry, experimental physics, vital statistics, general pathology, including bacteriology, hygiene, sanitation and sanitary engineering, and drawing and mensuration.

TYPHOID DISEASE IN CALDWELL, OHIO.—A dispatch from Caldwell, Ohio, states that for about a month an epidemic disease having some of the characteristics of typhoid and malaria has been prevalent in the town. The population of the place is about 1800. Cases of the disease have occurred in almost every family, and 25 deaths have occurred. Caldwell, it is said, has no drainage to speak of, and it is thought that the disease is due to bad water. The dispatches state that no strangers visiting the town have been attacked. The above death rate in a city the size of Chicago would represent 17600 deaths in a month, or one-sixth of the whole population in a year. Yet some people cannot see the necessity of paying out the money of the people for boards of health.

HUMAN AND ANIMAL BLOOD.—DR. PESEY CEVERA claims that human may be distinguished from animal blood by the following method: If the blood be mixed with a little bile, small crystals are formed which are of different shapes in different species of animals. In man, it is claimed, they are right-angled prisms; in the horse cubes; in pigs right-angled prisms very similar to those seen in rhomboids; in sheep rhomboidal plates; in dogs the same as seen in human blood; and in chickens more or less regular cubes.

AUTOPSY ON POISONED ANIMALS.—The Surgeon-General of the Indian Medical Department

has decided, and the Local Government sustains his decision, that a medical officer should not be called upon to perform an autopsy upon an animal that has been poisoned (to the extent of performing the work with his own hands), but that it is his duty to examine the viscera and report upon the facts; though if a veterinary surgeon can be had it would be more satisfactory to have him perform the duty. The case in point was that of an Assistant Surgeon at Madura, who refused to make an autopsy on a buffalo supposed to have been poisoned, on the ground that he was not a veterinary surgeon.

DR. JOSEPH TEFFT, died at his residence in Elgin, Illinois, August 26, 1888, from Bright's disease, at the age of 76 years. Dr. Tefft graduated in the Medical School at Woodstock, Vt., in 1832, and became one of the first settlers in the town of Elgin in 1835, where he not only acquired an extensive practice in his profession and maintained it for more than fifty years, but he became actively interested in every important interest affecting the community in which he lived, and retained his position as a leading and upright citizen to the time of his death.

DECLINE OF SMALL-POX IN ENGLAND.—DR. HENRY THORNE has called attention to the fact of the gradual decline of small-pox in England in the past 50 years. From 1838 to 1842 the deaths from small-pox in England amounted to 57.2 per 100,000; in 1880-84 the death-rate was 6.5 per 100,000. He thinks that vaccination has not only a direct influence in causing this reduction in the number of victims to small-pox, but that it has also a tendency to decrease the liability to the disease of children of vaccinated parents.

MEDICAL WOMEN IN ENGLAND.—Twelve students of the London Medical School for Women have recently passed the intermediate examination for the M.B. degree of that most exclusive body the University of London, which is ample proof that the London School for Women is doing good work, and that its students are preparing themselves thoroughly for the duties of the profession.

THE LARGE MORTALITY OF CENTENARIANS, as shown by the reports in the daily papers, threatens to leave this country, in a short time, without a single person one hundred years old.

FOREIGN CORRESPONDENCE.

BRITISH MEDICAL ASSOCIATION.

Fifty-Sixth Annual Meeting.

[EDITORIAL CORRESPONDENCE.]

Branches—Members—Financial Condition—Reports of Committees—Scientific Grants Committee—Collective Investigation Committee—The President's Address—Address in Medicine—Dr. MacEwen's Address—The Address in Physiology—The Sections and Section Work—The Entertainments—The Dinner.

The Fifty-sixth Annual Meeting of the British Medical Association was held in the halls and class-rooms of the University of Glasgow, commencing August 7, 1888. As is usual, a regular meeting of the Council was held in the Randolph Hall at 9:30 A.M., for members of the Council only. At 11:30 A.M. the first general meeting of the Association was held in Bute Hall, to hear and act upon the reports of the Council. Dr. J. G. Banks, of Dublin, President for the preceding year, took the Chair, briefly alluded to the prosperous condition of the Association during the year, returned thanks for the honors he had received, and introduced the President-elect, Dr. W. T. Gairdner, of Glasgow, who took the Chair and was greeted with much applause. Dr. Cameron, after a highly eulogistic speech, moved a vote of thanks to Dr. Banks for the able and courteous manner in which he had presided during the past year, which was seconded by Sir Geo. B. MacLeod, and adopted with much enthusiasm. Dr. Thomas Bridgewater, President of the Council, presented a general report of the doings of that body, embracing a variety of topics. Several new branches had been added during the year, one of which was in Ceylon, and one in Nova Scotia. The latter is the first branch formed in British North America and contains thirty-three members. The total number of members on the register of the Association at the beginning of the year was 11,107. Of these 359 have resigned, 132 have died, while 1,649 have been added, making the total number of members at date of the report 12,265. The net increase of 1,158 was mostly from the medical officers of the Army and Navy, who are receiving the active influence of the Association in procuring from Parliament such legislation as will give them proper relative rank and position in their respective departments of military service. The same report gave the total income for the year as £28,680 os. 3d. and the total expenses £26,060 17s. 8d., leaving a balance of £2,619 2s. 8d. Of the total expenditures, £20,285 2s. 4d. were on account of the publication of the *British Medical Journal*. The adoption of the report was moved by Dr. Bridgewater

and seconded by Drs. Holman and Morton, and was adopted without opposition. Dr. Morton took this occasion to urge upon members the duty of attending the several Sections and giving proper attention to the papers that had been prepared with much care by their authors.

Dr. Ernest Hart, Chairman of the Committee on Parliamentary Bills, gave a synopsis of the work done and the various bills and motions pending in Parliament relating to medical matters and moved the adoption of the report of the Committee.

Dr. Farquharson, M.P., in seconding the motion thought the time had come when all the influence possible was needed to sustain the interest of the Medical Department of the Army and Navy. He thought there was danger of the adoption of measures for diminishing the medical staff and lessening its emoluments. To prevent this was more important than the question of relative rank.

Surgeon-Major Ince made some criticisms on the Local Government Bill, mentioned in the report, and regarding the question of military rank in the Army he thought the Association was more likely to do harm than good. After some remarks having the same bearing by Dr. Fitzpatrick the report of the Committee was adopted.

Dr. Norman Kerr, Chairman of the Inebriates' Legislation Committee, made the annual report, showing some improvements in the Act regarding the treatment of inebriates, and much of general interest on the subject. Dr. Long Fox moved the adoption of the report. Dr. Eastwood seconded it, and the report was adopted with applause.

The report of the Scientific Grants Committee was presented by Prof. McKendrick, in the absence of the Chairman, Sir Joseph Lister, and in moving its adoption he said that during the past few years the Association had done good work by the expenditure of small amounts, and very important and valuable contributions had been made to science. Every care was taken to ascertain the nature of the investigations proposed and the qualifications of the gentlemen who made them. The Committee did not limit its operations to the giving of grants to gentlemen in laboratories throughout the country, and it was satisfactory to know that several very important reports had been made by men connected with no great educational or scientific institution, but men engaged in ordinary practice. The money was paid only for apparatus, chemicals, etc. They must not be disappointed at those investigations not leading to the discovery of any great or striking truth. A very large amount of scientific work consisted in the accumulation of details. It was given to only a very few to come upon any striking fact of generalization, but a contribution, however humble, made with the aid of scientific grants, was a contribution to the upbuilding of that temple of

science in which they were all so interested and of which they were all so proud. Surgeon-General Maclean, C.B., seconded the motion, which was carried unanimously. The total amount expended in prosecuting the investigations indicated during the year was £182, or about \$910, and extended aid to twelve investigators.

The report of the Collective Investigation Committee, of which Prof. G. M. Humphrey, of Cambridge, is Chairman, was presented by Dr. Alfred Carpenter, and in moving the adoption of the report he said: "It would be the last general report. Special reports would only be continued until the work in hand had been completed." Dr. Cummings, of Belfast, seconded the motion, which was adopted. This completed the series of reports emanating from the Council, and although an attempt was made to move a resolution on some other subject, it was defeated by an adjournment to 8:30 P.M., when President Gairdner would deliver his address. Although this was the principal general business session for the present annual meeting, it continued only 1½ hours, and was attended by not more than 250 members. Neither the first general session nor any of the subsequent ones were opened by prayer. But as a part of the programme of this first day a special sermon was preached in the cathedral at 3:30 P.M. by the Very Rev. John Caird, D.D., LL.D., Principal and Vice-Chancellor of the University of Glasgow. Although the afternoon was rainy, the large cathedral was crowded, and the sermon was an eloquent and logical defense of the doctrine of spiritual existence as opposed to the prevalent materialistic tendencies of the present time. His text was found in Romans, chapter xi, verse 36: "Of Him and through Him and to Him are all things, to whom be glory forever." The grand old cathedral and the necropolis surrounding it, dating back many centuries, added much to the interest of the occasion.

At 8:30 P.M., the time to which the general morning session had adjourned, the large and elegant Bute Hall was thoroughly filled, embracing many not members of the Association. Dr. Bridgewater, President of the Council, occupied the Chair, and introduced President Gairdner, who was greeted with prolonged applause, on the subsidence of which he proceeded to deliver the Presidential Address. He first gave a brief history of the city of Glasgow and of the development of its commercial and educational interests, and then took up the leading topic of his address, viz.:—"The Physician as a Naturalist." He traced the words physician and physic back through many centuries, and in chaste and eloquent language claimed the true physician to be preëminently a student of nature in its broadest sense. He condemned in severe terms the past influence of theories or dogmas and creeds in both medicine and religion, in doing which he perhaps failed in some

degree to maintain a just discrimination between the legitimate uses and the abuses of creeds of both classes. The address was listened to with profound attention, and called forth the most enthusiastic applause at its close. Sir Andrew Clark, in moving a vote of thanks, gave a brief but highly flattering history of Dr. Gairdner. The motion was seconded by the Lord Provost of the city, and was adopted with three ringing cheers. Without waiting for an adjournment the large audience dispersed, leaving not more than fifty or sixty members near the platform.

Dr. Edmund Waters, who had been cut off by the adjournment of the morning session, now brought forward the following proposition, viz.: "That the Council of the Association be desired to place before the General Medical Council the following resolution passed at the annual meeting held in Dublin in 1887, with the view of obtaining the opinion of the General Medical Council on the subject: 'That the Association is of opinion that the diplomates of the Irish and Scotch Universities and Corporations should possess the same privileges in respect of public appointments that are enjoyed by diplomates of the other divisions of the Kingdom.'"

After an animated discussion, the motion was carried by a large majority.

The second general session of the Association was commenced at 3 P.M. Wednesday in the Bute Hall, President Gairdner in the chair. He in a few appropriate words welcomed the foreign and colonial delegates. On motion of Dr. Thomas Bridgewater, President of the Council, Leeds was designated as the place for the next annual meeting, and Dr. C. G. Wheelhouse, of Leeds, was nominated as the President-elect. The Address in Medicine was then delivered by Dr. Clifford Allbut to a good audience, though the hall was not full. His subject was "The Classification of Diseases by means of Comparative Nosology." By comparative nosology he implied a description founded on the study of diseases as they affect different orders and species of living beings, from the lowest types to the highest or most complex, and also on the comparison of diseases as they affect different races of the human species.

Acknowledging that we had not the facts necessary for attempting a classification on the basis suggested, he proceeded to show that four methods of investigation were necessary for developing the facts desired, namely: *a*, concerning affinities and heredity; *b*, historical, relating to the origin of races and their influence on diseases; *c*, geographical, or the influence of environment; *d*, and the experimental, by which he meant a direct study, chemically and microscopically, of the morbid changes and products in all gradations of living matter. In directing attention to these several fields of inquiry Dr. Allbut presented some important facts and a greater number of interesting

suggestions, but pretty conclusively showed that many generations would yet pass before all the facts necessary for constructing a philosophical classification of diseases, founded on comparative nosology, would be at our command.

The address was listened to with much interest, and elicited a full measure of applause from the audience at its close. The usual vote of thanks was moved by Dr. McCall Anderson and cordially adopted by the audience. The chief part of the audience immediately dispersed, leaving only twenty-five to thirty members in the front seats or standing near by while Dr. W. H. Fitzpatrick moved "that every representative of the Branches attending a Council meeting be paid first-class railway fares to and from out of the funds of the Association." This led to a brief and not very orderly discussion, after which the session adjourned.

The third general meeting was held on Thursday, 9:30 A.M., in the Bute Hall, to hear the Address of Dr. William MacEwen, of Glasgow, "On Recent Investigations in Surgery of the Brain and Spinal Cord." The audience was large and was intensely interested in hearing Dr. MacEwen give an account of his own operative procedures involving the brain and spinal cord. As our present space will not permit us to give a proper analysis of this address, which was perhaps the most important one presented at this annual meeting of the Association, a more extended notice will be reserved for another occasion.

The fourth general meeting was held on the same day, at 3 P.M., in the Bute Hall, when the Address in Surgery was given by Sir G. B. Macleod, M.D., of Glasgow. He gave an interesting and well-written *résumé* of the advancements in the science and art of surgery during the reign of the present Queen, Victoria, *i. e.*, from 1837 to 1887. Being of a strictly historical nature, it naturally enough placed the achievements of Scotch surgeons in the foreground, and, though containing nothing not already well known to those familiar with medical literature, it was so well delivered that it commanded the full attention of the audience and received a most cordial vote of thanks, moved by Sir Spencer Wells and seconded by Dr. Teale, of Leeds.

The fifth and last general meeting was held on Friday, 2:30 P.M., in the Natural Philosophy Class-room instead of the Bute Hall, the President, Professor Gairdner, presiding. The Address in Physiology was given by John G. McKendrick, M.D., Professor of Physiology in the University of Glasgow. His subject was the "Problems of Respiration." He gave a most complete narrative of the progress of discovery relating to the function of respiration from the earliest periods to the present time, illustrating many points by experiments before the audience. Owing to the limited capacity of the class-room,

not more than half of those who desired to do so were able to hear the address, which was one of the most interesting in the series given during the annual meeting. Professor Rutherford, of Edinburgh, moved the vote of thanks, and Professor Roy, of Cambridge, in seconding it, paid a high tribute of praise on the address. It was adopted with enthusiasm and, as on previous similar occasions, the audience immediately retired, leaving not more than ten or fifteen members in the room to attend to those items of business necessary for a final adjournment. *Sections.* Twelve Sections were instituted for this annual meeting, namely: Medicine, Surgery, Obstetric Medicine, Public Medicine, Psychology, Anatomy and Physiology, Pathology, Diseases of Children, Ophthalmology, Otology, Pharmacology and Therapeutics, and Laryngology and Rhinology; all of which were accommodated in the several classrooms of the University. No Section work was done until Wednesday, the second day, from 10:30 A.M. to 2 P.M. The same time was occupied on Thursday, and on Friday from 10:30 A.M. to 1:30 P.M. Several important papers were read in different Sections and questions of much interest were discussed, but, as a rule, the attendance was small. Indeed, except in the first four Sections we have named, the number of members present at any one time was surprisingly small, for the most part varying from six to twenty-five. In the four exceptional Sections, *i. e.*, Medicine, Surgery, Public Medicine and Obstetric Medicine, the attendance in each varied at different times from 175 down to 25. The papers presented and the discussions elicited in the Section of Public Medicine contained many points of great interest to the citizens of Chicago as well as of all other cities in civilized countries. To some of these we shall have occasion to refer in more detail at another time.

The entertainments consisted of a *conversazione* given by the Principal and Professors of the Glasgow University in Bute Hall, on Wednesday evening, and another by the Lord Provost and Magistrates of the city, in the art galleries of the International Exposition, on Friday evening; a garden party by the President and Fellows of the Faculty of Physicians and Surgeons of Glasgow in the Botanic Gardens, on Friday from 4 to 6 P.M., to all of which the ladies were also invited. The usual annual dinner was served in St. Andrew's Hall on Thursday evening, and was attended by a large proportion of the members present at the meeting of the Association. As in previous years, each member paid for his ticket; those desiring wine paid one guinea, those desiring no wine paid 14s. The only difference in the tickets was, on the corner of the first was printed 1 guinea, and on the corner of the other 14s. The holders of each were freely intermingled at the table, only those paying for no wine needed no

wine-glasses at their plates. The dinner was served in excellent style and was accompanied by three kinds of very good music, namely: a band with instruments, one with bagpipes, and an orchestra of singers. The usual number of toasts and speeches closed the entertainment. During the latter part of the evening the spacious gallery was well filled with ladies. No less than eight excursions had been planned for Saturday to different points of historical interest, to any one of which members with their ladies could purchase tickets at reduced rates. The number of members registered as present at this annual meeting was quite equal to the average attendance on previous meetings, and in scientific and practical interest it was fully equal to the one held in Brighton in 1886, where the active workers were mostly English, while here the Scotch workers were equally predominant. The number registered as present from the United States was 21, several of whom participated in the work of some of the Sections.

Glasgow, August 14, 1888.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Congress on Tuberculosis—Dangers of Tuberculous Animals—Tuberculous Meat and Milk—The Contagion of Tuberculosis—Surgical Treatment of Tuberculosis—Early Diagnosis of Tuberculosis—Tuberculosis of the Fowl.

The Congress on Tuberculosis which was lately held in Paris, is looked upon as a very great success, not that there was anything particularly new elicited from the works of the various speakers as a good deal that had been communicated had been known before, but yet it must have been a great satisfaction to the Congress to be enabled to confirm the views of such men as Morgagni, Andral, Laënnec, and others, who had foreseen the infectious nature of tuberculosis. The more recent researches of Professor Villemin and the still more recent discovery of Professor Koch render this point indisputable. M. Chauveau, Professor of Veterinary Medicine at Lyons, who presided over the meetings of the Congress, referred in his address to the researches and works of the School of that city by which the identity of human tuberculosis and bovine tuberculosis, as well as that of the tuberculosis of other animal species was demonstrated beyond doubt, and this transmissibility of the same malady from one species to another, is fertile in practical consequences. This is one reason why the Congress on Tuberculosis will mark in history the achievements of comparative pathology.

It is impossible for me in the limited space of a letter to give even a brief summary of the communications that were made to the Congress. I may, however, concisely refer to some of them.

M. L. H. Petit, the General Secretary of the Congress, observed in his report, "that tuberculosis makes ravages, which are steadily on the increase, in Norway, in Greece, in Turkey, in Asia Minor, in North and South America, as well as in France. This fact excited alarm, a French savant took up the cause and at his suggestion the present Congress was organized, the invitation to which veterinarians and medical men from all parts of the world readily responded, and proved by their presence and communications the importance of the subject they had undertaken to elucidate." M. Petit added, "that it was gratifying to find that French science still had some credit out of France, and in fact the part which it can claim in the progress accomplished since the commencement of the century in this grave question of tuberculosis, is sufficiently great to have inspired confidence in our work in foreign parts as well as in France."

I may observe that none of the views now established on this malady had been neglected: bacteriology, pathological anatomy, physiology, clinical medicine and surgery, hygiene, sanitary police, have each in their turn contributed a precious contingent of documents. The veterinarians, in particular, have contributed in no small measure to elucidate by their very instructive communications the importance of comparative pathology and how the latter may with advantage be utilized in human medicine. They pointed out the dangers incurred by the employment of cow's milk in the bringing up of young children and of the blood which is freshly drawn from oxen and drunk at the slaughter house by anæmical ladies and girls. The members of the congress were unanimous in acknowledging that milk drawn from tuberculous cows should be looked upon with some misgiving, as it is considered virulent and an excellent vehicle for the tubercle bacilli. A great number of cows healthy in appearance are tuberculous. Their milk, their muscular fibre contain bacilli in the proportion of four to sixteen animals given up to the butcher.

M. Nocard, Professor of Veterinary Medicine at Alfort, dwelt on the dangers to which one is exposed by the use of the flesh and milk of tuberculous animals. He stated that it has been urged that if an animal presented tuberculosis in any organ the animal should be seized and considered unfit for food. M. Nocard, however, thought that this radical measure was unnecessary, as one can eat without fear the flesh of tuberculous animals the tubercles of which are limited to the viscera. Even the flesh of animals the tuberculosis of which is generalized would be but exceptionally to be dreaded. At the debate that followed, a large number of the members present did not agree with M. Nocard, and affirmed that the use of the meat, and particularly the milk of tuberculous animals is dangerous. They therefore pro-

posed the complete seizure of the meat of all tuberculous animals instead of the partial seizure which M. Nocard judges sufficient. To exemplify how one may be deceived by external appearances as to whether a cow or an ox may be affected with tuberculosis, and how absolutely impossible it was to affirm before the autopsy whether or not an animal was tuberculous, one of the members recalled that on a Shrove Tuesday, on which occasion a fattened ox is paraded about the streets, presented, after being slaughtered, the most indisputable characters of tuberculosis.

The danger of the use of raw meat which is so much in vogue is sufficiently obvious. The same may be said of raw milk, and the danger attending both may be obviated by simply subjecting them to cooking or boiling. When the milk cannot be boiled, goat's milk should be used instead, as these animals are seldom or never affected with tuberculosis. The same may be said of asses milk.

Professor Cornil has demonstrated, by some interesting experiments, that the contagion of tuberculosis may be effected through the mucous membrane, and by another series of experiments on guinea pigs, he was led to the conclusion that tuberculous inoculation may be effected in sexual intercourse. When the question of infantile polyadenopathy, introduced by Dr. Legroux, of Paris, was being discussed, Dr. Daremberg observed that he had met with several cases of this specific adenopathy concurrently with infectious tuberculous tonsillitis. Children, he remarked, easily contracted this latter affection from their tuberculous parents by their cohabitation with them and also by the act of being kissed by them.

With regard to the surgical therapeutics of tuberculous affections, Dr. Vargas passed in review all the surgical methods directed against tuberculous affections in various parts of the body. In Spain, he said, surgery tended to active measures and to pursue local tuberculosis wherever they originated, even if it were in the brain or lungs.

Dr. Espina y Capo, of Madrid, made a communication on the signs of the early diagnosis of tuberculosis in man. He attributes great importance to the measurements of the chest. When the intermammary space does not exceed 17 or 18 centimetres, when the axillary index does not exceed 72 centimetres, there are great chances that one has not to do with pulmonary tuberculosis. It was generally supposed that tuberculosis may be communicated through the flesh of the common fowl. Dr. Strauss, Professor of Comparative Pathology, at one of the meetings of the Congress made, in presence of the members, an autopsy of two fowls which had ingested, the one during one year, the other for eight months, 50 and 28 kilogrammes respectively of tuberculous sputa, neither the one nor the other presented the least tuberculous lesion, which would prove the

very great power of resistance of the gallinæ to tuberculous infection.

The Congress concluded its meetings on July 31st, but before doing so the following propositions were voted: 1. All meat from tuberculous animals should be seized. 2. Instructions should be issued to all communes pointing out the dangers of contagion, the precautions to be taken against contagious maladies, against suspicious aliments, etc. 3. A regular system of inspection of dairies should be organized. The President then declared the Congress closed, and announced that the next Congress on tuberculosis will meet in two years.

A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Meeting of the Fifth District Branch—Tumor, Enclosed in a Membranous Sac, of the Internal Os Uteri—Rupture of the Diaphragm—St. John's Guild Seaside Hospital.

The summer meeting of the Fifth District Branch of the New York State Medical Association was held this year at Babylon, Long Island, the principal town on the Great South Bay, that famous resort of perennial delights to all devotees of sailing, fishing and shooting. The meeting was a pleasant and successful one, though the attendance was not as large as at some of the other gatherings of the Branch; and among the papers read were one on Heart Lesions and Albuminuria, by Dr. J. G. Truax, of New York, and the report of the Removal of a Tumor Enclosed in a Membranous Sac from the Intestinal Os Uteri, by Dr. William Govan, of Stony Point, Rockland County.

In Dr. Govan's case the patient was a married lady 48 years of age, and the mother of six children, who for nearly four years had been confined to bed on account of constant flooding and the debility resulting from these repeated hæmorrhages. In addition, she was suffering from chronic malarial fever. For about two years she had considerable pain and bearing down, and one year after this had commenced a tumor was discovered protruding from the uterus into the vagina; while six months before she was seen by Dr. Govan the tumor, after a movement of the bowels, had protruded from the vulva. On account of the extremely weak and nervous condition of the patient, no satisfactory examination could at first be made. The pulse was 90, and the temperature 102°, and the pain in the lower part of the abdomen so severe that she would not allow herself to be touched. After a few days of supporting and antipyretic treatment, however, an anæsthetic

was administered and a thorough physical examination made. A tumor was found completely filling the vagina, and this was ascertained to consist of a shining mass as large as a child's head at birth, and with a neck attached quite high up in the cervix uteri.

With the assistance of the attending physician, Dr. Govan made an incision with a serrated spoon, as far up as possible around the pedicle, and pushed the chain of an *écraseur* close up to the attachment of the tumor. The chain having twice broken, he drew the tumor outside of the vulva with a tenaculum, when he found that he had to deal with a membranous sac containing a large hard substance. With the serrated spoon he then cut through the neck of the sac as far up inside the os as he could reach; upon which a large quantity of fluid escaped, and with it a hard tumor about the size and shape of a large turnip, no doubt a myoma. In order to prevent hæmorrhage the vagina was packed with small sponges saturated with a solution of persulphate of iron, and on visiting the patient the next day he found her in excellent condition, no hæmorrhage whatever having occurred. Since the operation, which was performed October 17, 1887, there has been no return of the flooding, and under appropriate tonic treatment the lady has completely regained her health. It was, therefore, a case of long-standing and much suffering, followed by a rapid recovery. In the discussion on the paper Dr. Truax related a similar case occurring in his hospital practice.

Dr. N. W. Leighton presented the report of a case of *Ruptured Diaphragm, with Death by Apnoea*. The patient, a lady 28 years of age, to whom he was called in haste, was found to be suffering from severe pain in the epigastrium, nausea and dyspnoea, while her face wore an anxious expression. He learned that she was in her usual health in the morning, had been to church, and afterwards eaten her dinner, a part of which consisted of fried scollops. Supposing that she was suffering from colic in consequence of embarrassed digestion, he ordered some powdered ipecac in a goblet of water, but the patient was apparently unable to swallow it. Thinking that the taste of the ipecac probably aggravated the nausea and increased the difficulty of swallowing, he tried soda in warm water, peppermint and clear warm water; but with the same result. Believing that the dyspnoea was due to gaseous distension of the stomach, and the dysphagia and other nervous manifestations to hysteria, he left the house for a short time, urging the friends of the patient to persist in having her try to swallow.

Dr. Leighton returned in less than half an hour, prepared to administer ether for the relief of the pain and to induce emesis; but, to his surprise, he found his patient dead. He demanded a post-mortem examination, refusing to give a certificate

without it. The autopsy was made about twenty-four hours after death, when an opening was found in the diaphragm, on the left side, through which the stomach and the spleen had entered the left thoracic cavity. The stomach was distended, filling the entire cavity except the spaces occupied by the spleen below and the left lung above, where it was compressed into a mass about the size of a large orange. The walls of the stomach were tense by the pressure of gas within them, and the organ also contained the partially digested meal taken a few hours before death. The heart was pushed to the right of the median line.

The opening through the diaphragm was sufficiently large to admit four fingers into it, side by side. The edges of the ruptured muscle were thickened and rounded, as if cicatrization had occurred a long time before the date of the fatal occurrence; and the hypertrophied margins showed the effort of nature towards compensation for the rupture. The information was elicited from the lady's husband after the examination that she had had a very severe labor about seven years before, and that during the last pains she called out that she "felt something give way." Since that time he said she had had numerous attacks of colic and indigestion with nausea, but was never able to vomit. She was never again pregnant.

It was the conclusion of Dr. Leighton, as well as other medical men present at the autopsy, that the rupture of the diaphragm had originally occurred during the parturition referred to; although it had not appeared to give rise subsequently to any great inconvenience, except the inability to evacuate the stomach when nausea and embarrassed digestion required it. During the fatal attack it was believed that the stomach, by the movements incident to its gaseous distension, was forced through the ruptured diaphragm, and then continued to expand till it forced the diaphragm downward, dragged the spleen into the thoracic cavity, pushed the heart to the right of the median line, and expelled all the air from the left lung. In conclusion Dr. Leighton said that he was not prepared to state to what extent the displacement of the organs took place at death; but there was no doubt in his mind about the entrance of the stomach into the thorax after the patient's last dinner and before her death.

Before the meeting adjourned Dr. E. H. Squibb, of Brooklyn, the Secretary of the Branch, said that it had been hoped to hear read a full report of a case of hydrophobia treated at a Brooklyn hospital last winter; but as the post-mortem examination of the spinal cord had not yet been quite completed, it was thought best to postpone the report until a future meeting, when all the particulars of the case could be presented.

The new wing of the St. John's Guild Seaside Hospital at Cedar Grove, Staten Island, was re-

cently opened with appropriate ceremonies. Almost a hundred invited guests who were present on this occasion went down to the Island on board the floating hospital of the Guild, where they had full opportunity of observing its beneficent work among the sick children of the poor. On behalf of the Hospital Committee Dr. Charles A. Leale formally presented the new wing, which was received by the Guild through its President, Wm. H. Wiley, Esq.; after which remarks were made by other officers of the Guild and by Dr. Moreau Morris, Chief Inspector of the Board of Health's summer corps of physicians, whose work among the tenement houses is so nobly supplemented by that of the Guild. The new wing of the Seaside Hospital, which is now fully equipped for service, is 100 feet long and 25 feet in width, and contains sixty-four cots. This increases the hospital's capacity one-half, so that 205 mothers and children can be received at a time; making the institution the largest of its kind in the world. P. B. P.

The Dinner at the Congress of Physicians and Surgeons.

Dear Sir:—Some complaints having reached the Committee in regard to the distribution of invitations to the dinner to be given to the foreign guests of the Congress of Physicians and Surgeons to be held in this city next month, I must beg the use of your columns to say that this distribution was in my hands.

The Council of the Congress having expressed themselves as averse to any elaborate entertainment on the part of the Congress, it may be said in the first place, that this dinner is *unofficial*, and is in the hands of the *members* of the Committee and not of the Committee.

As it was necessary, after the matter was decided upon, to act quickly, in order that proper invitations might be sent to Europe and answered in time, it was not possible to arrange this distribution so methodically as might have been done had the time been longer. It was intended that every member of the Congress; that is, every member of any of the constituent Associations, should have an opportunity to subscribe.

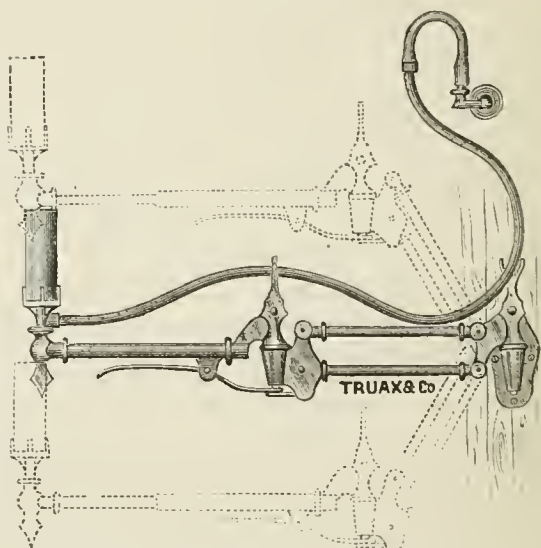
Some circulars were sent directly by me and some of them by such representatives of the Associations as I could most readily get at. It is possible that there may have been accidental omissions, and it is more than possible at this season, when so many gentlemen are absent from home, that some invitations have gone astray. Another possibility, which we know to have been in some cases an absolute fact, is that circulars have been placed in the waste paper basket. This note is intended as an invitation to every member of all the Associations composing the Congress of American Physicians and Surgeons, who wishes to do

so, to send his subscription of \$20 to Dr. S. C. Busey, 1545 I St. N. W., Washington, D.C., for a dinner to be given at Willard's Hotel, in this city, on Monday, September 17, at 7:30 P.M. I am very respectfully,
ROBERT T. EDES.
Washington, August 21, 1888.

NEW INSTRUMENTS.

A NEW ADJUSTABLE LAMP-BRACKET FOR PHYSICIANS.

BY S. S. BISHOP, M.D.,
OF CHICAGO, ILL.



The accompanying cut illustrates the working of an adjustable lamp-bracket I have designed for the use of physicians, especially adapted for eye, ear, nose and throat treatment. It overcomes the difficulty of properly illuminating these parts from any desired direction, and at any given angle. The lamp is easily adjustable to any point lying within a perpendicular line eighteen inches in length, and it will swing through the arc of a circle, having a radius of three feet. It is supplied with joints, parallel arms and an extensible lamp holder in such a manner as to place the lamp either within a few inches of any wall to which it is attached, or at any intermediate point to a distance of three feet from the wall. It is so constructed that, in order to raise or lower the light, you need only to press the thumb and finger on the extension arm and brake beneath so as to close them together; then set the lamp at the desired point; release the brake, and the light remains wherever it is placed. The brake sets automatically, without a jerk, and without loss of motion. These points will be appreciated

by those who have to use light concentrators on the imperfect brackets now in use.

The lamp holder is prepared to receive an argand burner connected with a flexible gas tube, so that the bracket may be attached to a wall or desk in any part of an office or house, and connected with the gas fixtures like an ordinary drop lamp. Or, where there is no gas, a kerosene lamp holder is screwed on instead of a gas burner, and an oil lamp of large size may be used to obtain brilliant illumination. The bracket is strong enough to support a weight of five pounds or more. Its utility can be extended by substituting a tray for the lamp receiver, so as to make it a convenient instrument holder for surgeons and dentists alike. I have employed this bracket in my office a sufficient length of time to demonstrate its superiority over any other that I have been able to find after a most exhaustive search.

719 W. Adams St.

BOOK REVIEWS.

THE PHYSICIANS' LIESURE LIBRARY. ABDOMINAL SURGERY. By HAL C. WYMAN, M.S., M.D., Professor of Surgery and Operative Surgery, Michigan College of Medicine, etc., 8vo, paper, pp. 87. Detroit: George S. Davis. 1888. Chicago: W. T. Keener. Price 25 cts.

In this little book may be found a clear and concise presentation of the present status of elementary and experimental abdominal surgery, and one will not be less interested in this handbook because of having read a more pretentious volume.

We particularly commend to the attention of the student and practitioner the following, from the preface of the book: "How then, can a student not in reach of hospitals and an abundance of opportunities and materials, attain that degree of knowledge which shall give him that confidence so necessary to the conscientious, good surgeon.

"He must do it by providing his own opportunities and material.

"Where can the necessary material be obtained?

"For answer, I say, search the kennels and the hutches about you. Hunt up those oft tried, faithful and most efficient martyrs who give their lives to the cause of science—the dogs and rabbits.

"Vincent Boune's *Epitaphium in Canem* ought to be read and appreciated by every one who undertakes a vivisection.

"Dogs have rendered inestimable aid in evolving the numerous great surgical discoveries which have added so much to the years and comfort of mankind. With the aid of dogs hundreds of ambitious, enthusiastic surgeons have been enabled to make successfully the studies necessary

for an understanding of the means by which nature repairs damage."

There are many men that would gladly do experimental surgical work if they knew how to begin. They can learn not only the beginning but the whole subject of experimental abdominal surgery from this book.

THE SOUTHERN CATTLE PLAGUE (Texas Fever) of the United States, with especial Reference to its Resemblance to Yellow Fever. An Etiological Study. By FRANK S. BILLINGS, Director of the Patho-Biological Laboratory of the State University of Nebraska. 8vo, pp. 141. Lincoln, Neb.: Journal Company, State Printers. 1888.

After a scathing (*sic*) criticism of the definitions of Southern cattle plague of Mr. John Gamgee and Mr. D. E. Salmon, Dr. Billings says: "The only logical conclusion as to this disease is, that it is an *Extra-Organismal-Infectious-Septicæmia*." Dr. Billings claims to have discovered the true germ of the disease, and has a very pretty colored plate of their appearance in the blood. Preliminary to his description of it, however, he wanders off into a page of rather spread-eagle praise of Nebraska and its State University. Every one knows that the West, particularly Nebraska, is moving, and no one is at all inclined to doubt it until the assertions of the fact are unnecessarily repeated. But to return, Dr. Billings thinks, too, that he has discovered the germ of yellow fever, "though my proof is largely of an *a priori* nature." The *a priori* proof was the finding, in some pieces of liver and kidney from a case of yellow fever, organisms "belonging to the same ovoid belted group of organisms" found in cattle plague.

The author adduces practical evidence that the manure must be the chief medium by which infection of the land occurs, and that Southern cattle plague is produced by inoculation with a pure cultivation of its micro-organism. In regard to prophylaxis against the disease Dr. Billings proposes quarantining the Southern cattle until they shall be no longer disease-producing elements, and disinfecting cattle cars whenever they have been used. He thinks there is no question that the disease can be prevented by inoculation.

Altogether, the little book is a curious example of a record of what seems to have been good work, almost buried in verbosity. It contains 138 pages of reading matter; it would be much more readable, and far better as a scientific communication, did it contain only 60 or 70 pages at most. The profusion of unnecessary words is all the more objectionable because they are used in what sinks almost to personal abuse of workers in the same field. The book is dedicated "To Rudolph Virchow, Teacher, Friend, and Master, in whose footsteps I am but a humble follower."

Can imagination picture Virchow making a quotation in a report, and expressing disapproval by "The above is all bosh?" We doubt if Virchow has left footsteps, for any one to follow, in which he shows absolute intolerance and sinks almost to personal abuse of one holding an opinion opposed to his. Dr. Billings has a great field in which to work, and we have no doubt that he will take advantage of his opportunities; we hope, meanwhile, that a more tolerant and scientific spirit will pervade his future writings.

A SYSTEM OF OBSTETRICS. By American Authors. Edited by BARTON COOKE HIRST. Volume 1, 8vo, pp. xiv—808. With a colored Plate and 309 Engravings on wood. Philadelphia: Lea Brothers & Co. 1888.

There can be but little doubt that this work will find the same favor with the profession that has been accorded the "System of Medicine, by American Authors," and the "System of Gynecology," all from the well-known house of Lea Brothers & Co.

This volume contains eight articles—we may say monographs, the first being on the "History of Obstetrics," by Dr. George J. Engelmann, who has already added so much to the history of this department. In regard to the "Physiology and Histology of Ovulation, Menstruation, and Fertilization: the Development of the Embryo," we find the first example of the treatment of this branch of obstetrics, in an obstetrical work, by a physiologist. The reader will scarcely need to be told anything of the character of this paper when it is said that the author is Dr. H. Newell Martin, of Johns Hopkins University. In a paper of 122 pages the editor of the work discusses "The Fœtus: its Development, Anomalies, Monstrosities, Diseases, and Premature Expulsion," abortion, miscarriage, and premature expulsion taking up 22 pages of this paper. Dr. W. W. Jaggard contributes the article on "Pregnancy: its Physiology, Pathology, Signs, and Differential Diagnosis." The "Conduct of Labor, and the Treatment of the Puerperal State" are discussed by Dr. Samuel C. Busey, the "Mechanism of Labor, and the Treatment of Labor based on the Mechanism" by Dr. R. A. F. Penrose, the "Use of Anaesthetics in Labor" by Dr. J. C. Reeve, and the "Anomalies of the Forces in Labor" by Dr. Theophilus Parvin.

One is at a loss to know what to say of this volume, for fear that just and merited praise may be mistaken for flattery. The subjects of some of the papers are discussed in various works on obstetrics, though not to that full extent that is found in this volume. The papers of Drs. Engelmann, Martin, Hirst, and Jaggard, however, and that of Dr. Reeve, are incomparably beyond anything that can be found in obstetrical works. Certainly the editor may be congratulated

for having made such a wise selection of his contributors, and the profession may be congratulated that the editor did not assign the subject of his paper to some one else.

DISSOLUTION AND EVOLUTION AND THE SCIENCE OF MEDICINE: An Attempt to Coördinate the necessary facts of Pathology and to establish the first principles of Treatment. By C. PITFIELD MITCHELL, M.R.C.S., England, etc. 8vo, pp. xvi, 246. London: Longmans, Green & Co. 1888. Chicago: W. T. Keener.

As we have said before, though the remark is not original with us, what is worth doing at all is worth doing well. A book that is worth the printing is worthy of an index, and it is difficult to conceive how any author or any publisher can issue a scientific work without an index, nor do we know of any excuse that can justify such negligence.

Mr. Mitchell is a follower of Mr. Herbert Spencer. One that has read Mr. Spencer's "Synthetic Philosophy," and every one that has not should do so, knows that its sustaining elements are the doctrines of evolution and dissolution. The design of Mr. Mitchell's work "is to inquire whether these may not be made fertilizing principles for large collections of the data of pathology, and thus the means of practice for the physician and surgeon."

To give a meagre idea of the scope of the work in our limited space, it may be explained that the author discusses inflammation and suppuration as dissolutional changes, resolution and repair as evolutionary changes, retrograde metamorphoses as dissolutional changes, the changes induced by animal and vegetable parasites as exemplifying dissolution, neoplasms as exemplifying evolution. Among special diseases acute and chronic Bright's disease, hepatic cirrhosis, and pulmonary inflammations are discussed, as well as locomotor ataxia and other disorders of the nervous system, the fevers, diabetes and allied affections, and diseases of the mind.

To get a further idea of the scope of the book one must read it; and if he cannot agree with all that the author says, he will have at least been interested and become the possessor of many new ideas.

The Physicians' Leisure Library. DISORDERS OF MENSTRUATION. By EDWARD W. JENKS, M.D., LL.D., Professor of Gynecology in the Michigan College of Medicine and Surgery. 8vo, pp. 120. Detroit: George S. Davis. 1888. Chicago: W. T. Keener. Paper, 25 cents.

A very good account of the disorders of menstruation, illustrated. The size and make-up of the numbers of the "Leisure Library" make them very convenient, and their price places a whole series easily within the reach of every one.

MISCELLANEOUS.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—In view of the fact that frequent inquiries are made of the Committee of Arrangements by medical men and others in regard to the character of the organization now known as The Congress of American Physicians and Surgeons, which will hold its first triennial session in Washington, September 18, 19, and 20, it may be proper to state that several years ago the American Surgical Association passed a series of resolutions declaring it expedient that the special medical societies in this country should adopt some plan of organization by which they should be brought together at certain stated periods, and invited the other societies to cooperate with it in perfecting such a scheme. This invitation was accepted by the several societies, and in October, 1887, a committee of conference, composed of delegates from each of the societies, assembled in this city and agreed upon a plan of association, which was subsequently considered and accepted by the societies constituting the Congress as now organized. This plan consists simply of the agreement that the medical societies named shall hold their usual annual meetings at the same time in this city every third year, and that an executive committee, composed of one member of each society accepting the agreement, shall arrange for one or more general meetings for the consideration of such medical subjects by such physicians and surgeons as it may select, to be followed by such general discussion as time may permit. The present Executive Committee is also charged with the duty of devising and submitting a plan of permanent organization, which will be considered at a preliminary meeting on Tuesday morning, September 18. There is no membership in the Congress proper. Membership belongs exclusively to the several societies constituting the Congress. Each society prescribes its rules for admission of candidates, and transacts its business according to its own method. The Congress, as such, does not in any manner interfere with the autonomy of the several constituent societies.

The guests are men of distinction in some special department of medical science, who have been invited by some one of its constituent societies to attend its meetings, and perhaps to present a paper on some chosen subject. They are guests of a society, not of individual members. The Committee of Arrangements has not claimed or exercised the privilege of naming guests, nor has it conceded the privilege to individual members. At its suggestion the Executive Committee has invited the heads of the Government Bureaux of Medicine, the president of the last International Congress, and several citizens to whom it was indebted for courtesies. In the event there should be present from abroad any medical man, who may not have been specially invited, the Committee will hold itself bound by ordinary courtesy to include him in the list of guests.

The meetings of the Congress and of the societies will be open to the profession. Any medical man who may choose to attend has the privilege of doing so; but the privilege of taking part in the discussions will be limited to the members, guests, and those who may be invited to do so by the societies respectively. The invitation to attend the meetings and engage in discussion, will not, however, entitle one to the privileges of a guest.

Members and visitors must avail themselves of the ordinary excursion rates of railroad fare.

The Postmaster of this city has arranged facilities for the distribution of mail at the office of registration, in Willard's Hotel. Letters must be addressed to "The Congress of American Physicians and Surgeons."

It may be added that the Committee of Arrangements declines to make any provision for, or to have anything to do with, any exhibit of pharmaceutical preparations and medical and surgical appliances.

I assume the responsibility of making the foregoing statement for the information of those concerned, and to avoid confusion and misunderstanding. And it gives me great pleasure to announce that the meeting in every aspect promises to be a conspicuous success.

SAMUEL C. BUSEY, M.D.,

Chairman Committee of Arrangements.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION will meet in Pickwick Theatre, Jefferson and Washington Aves., in St. Louis, September 25, 26 and 27, 1888, two weeks later than first announced. This date was selected in order that the cheap railway rates during the Carnival season of St. Louis might be made available. The programme is perfected, and the entire length of the meetings from 9:30 A.M. to 5:30 P.M. each day will be taken up with strong papers, and full and free discussions, there being nothing in the way of extraordinary or irrelevant business, all such matters being settled by committees, without discussion. The three evenings will be consumed by public and private entertainments, and each and every delegate may be assured that constant efforts will be made in the direction of catering to his comfort and enjoyment.

The sentiment animating the Committee of Arrangements and officers of the Association in planning this meeting has been to provide for good, solid scientific work while the sun shines, and at night let recreative effort and pleasure reign. All physicians west of the Alleghany Mountains are invited to become members, eligible to membership under the following from the Constitution:

ART. III. Membership in this Association shall be limited to those members of the profession of medicine who acknowledge allegiance to the American Medical Association by signing its Code of Ethics. No individual who shall be under sentence of expulsion, suspension or disability, from any recognized State, County, District or Local Medical Society, shall be eligible to membership in this Association until said disability shall have been removed. All applications for membership shall be referred to the Committee on Credentials. The annual dues shall be \$3, payable in advance.

For further information, address I. N. Love, M.D., Chairman Committee of Arrangements, Lindell and Grand Aves., St. Louis.

N. B. Kindly inform us prior to September 24 whether or not you can attend. Be sure and secure receipt from local Ticket Agent for full fare paid.]

AN ACCIDENT FROM CARELESSNESS.—A very serious accident occurred in Topeka, Kansas, on August 14, by which Dr. Detlor, a veterinary surgeon, was seriously injured. He had undertaken to pulverize nitrate of potassium and sulphur in an iron mortar with an iron pestle! The Topeka *Commonwealth* gives the following account:

"There was a violent explosion, flame and smoke filled the air, and small bits of iron flew like hail in every direction. These pierced the skin of those who stood about, went into the walls of the office and out through the window, and one piece even struck through a board partition, struck a horse on the opposite side in the hock joint and inflicted a serious wound. The windows were crushed like an egg-shell, the electric lamps and telephone wires were destroyed, and in short the entire contents of the room, including books, papers, medicines, and clothing, were torn, burned, smashed, and mixed up in one indescribable mass, which was made ghastly by a sprinkling of shreds of flesh, pieces of bone, parts of fingers, and every horrible evidence that some one had suffered severely by the explosion. The chief victim was Dr. Detlor. There were several others who suffered from the effects of the explosion, but in a less degree, and some of them very seriously. One of these was Dr. E. D. Shevalier, of Cortlandt, N. Y., who came to Topeka about six months ago, and was practicing with Dr. Detlor. A piece of the iron mortar passed through his left arm, inflicting an ugly and painful but not dangerous wound. F. M. Hopkins,

a student who had been with Dr. Detlor about a year, had his clothing torn from his body, and received some slight scratches. The office in which the explosion occurred was a total wreck."

EFFECT OF NUTRITION UPON THE FUNCTIONS OF THE ORGANS.—The *Kölnische Zeitung* tells how, at a recent review of Russian troops which took place at night, great confusion was caused by inability of large numbers of the soldiers to see, although the light was sufficient for a person of ordinary vision to distinguish even the minutest objects at some distance. Dr. Meissner investigated the matter and demonstrated that the whole cause of the trouble was insufficient nutrition. The review occurred during the Greek fast, when the faithful eat no animal food. Soon after resumption of the usual diet the vision became normal. This disturbance occurs sometimes in insufficiently-fed nursing women.—*National Druggist*.

DR. LEVI J. ALLEMAN died at his home in Boone, Iowa, August 26, 1888, aged 46 years. Dr. Alleman was born in Fayette, N. Y., graduated at the University of New York in 1863, and at once entered the Army as Asst. Surgeon of the First New York Veteran Cavalry. He served during the remainder of the war and was mustered out with his regiment in September, 1865. He settled in Boone, Iowa, immediately after leaving the service, and remained there to the time of his death. His death was due to Bright's disease. He was a member of the American Medical Association.

WATER-PURIFICATION BY LIME.—A man living in the shade of the Catskill Mountains has entered upon a new branch of business. He heard that well water could be purified with lime, so he emptied a bushel and a half into his well and felt blissful and happy. It turned out that, because of the dryness of the season, there was only three feet of water in the well, and ever since his experiment he has been selling a good article of whitewash to his neighbors at two buckets for a cent, and walking a mile and a half to the creek for drinking water for his family.—*New York Graphic*.

DR. THOMAS TAUNTON SABINE, late Professor of Anatomy in the College of Physicians and Surgeons of New York, died on August 23, aged 47 years. As a teacher of Anatomy Dr. Sabine probably had no superior and but few equals in America. As a surgeon he was very successful, being connected with several of the hospitals of New York.

EPIDEMICS AND NEGLECT.—The *Sanitary News* says: There has not been a single epidemic this summer that was not directly traceable to neglect of ordinary sanitary requirements.

PROFESSOR VON ESMARCH, of the University of Kiel, an uncle, by marriage, of the Emperor William II, is in America, having come to attend the Congress of American Physicians and Surgeons at Washington.

DR. GEORGE T. KEMP, late Fellow of Johns Hopkins University has been appointed Associate in Biology and Physiology in the Hoagland Laboratory, Brooklyn.

DR. W. L. BALDWIN, one of the best-known physicians of Jacksonville, Fla., died of yellow fever on September 3. He was a graduate of Albany Medical College, in 1863.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from August 25, 1888, to August 31, 1888.

Lieut.-Col. Richard H. Alexander, Surgeon, detailed a member of Board to meet at San Carlos, A. T., August 28, to select a site for a new post at that place. Par. 1, S. O. 44, Div. Pacific, August 15, 1888.

Major Chas. H. Alden, Surgeon, detailed as a member of the Board of medical officers convened at U. S. Military Academy, West Point, N. Y., vice Major Charles R. Greenleaf, Surgeon, relieved. Par. 2, S. O. 199, A. G. O., August 28, 1888.

Major Daniel G. Caldwell, Surgeon, to report to the Recorder of the Retiring Board in session at Ft. Leavenworth, Kan., as a witness in the case of Capt. Thomas Sharp, Seventeenth Infantry. Par. 2, S. O. 74, Dept. Platte, August 18, 1888.

Major Daniel G. Caldwell, Surgeon, having completed his duty as witness before Retiring Board, Ft. Leavenworth, Kan., to return to his station, Ft. D. A. Russell, Wyo. Par. 4, S. O. 106, Dept. of the Missouri, August 24, 1888.

Asst. Surgeon Leonard Y. Loring, granted leave of absence for one month. Par. 1, S. O. 97, Dept. of Ariz., August 23, 1888.

Capt. Marcus E. Taylor, Asst. Surgeon, granted leave of absence for four months, to take effect about October 15, 1888. Par. 8, S. O. 196, A. G. O., August 24, 1888.

Capt. Henry T. Birmingham, Asst. Surgeon, relieved from duty at Ft. Myer, Va., and ordered to Ft. Klamath, Ore., for duty. Par. 18, S. O. 196, A. G. O., August 24, 1888.

Asst. Surgeon R. R. Ball, U. S. Army, Ft. Riley, Kan., ordered to Ft. Lewis, Col., for temporary duty. Par. 5, S. O. 108, Dept. of the Missouri, August 27, 1888.

Asst. Surgeon Eugene L. Swift, upon being relieved from temporary duty at Ft. Klamath, Ore., to return to his proper station, Ft. Spokane, W. T. Par. 18, S. O. 196, A. G. O., August 24, 1888.

Asst. Surgeon Ogden Rafferty, to proceed from Ft. Clark to the camp at the Dept. rifle range near San Antonio, Tex., and report for temporary duty. Par. 3, S. O. 85, Dept. of Texas, August 15, 1888.

Asst. Surgeon Ogden Rafferty, upon conclusion of Dept. rifle competition will report to the Inspector of rifle practice, Div. of the Missouri, for assignment to duty in connection with the Div. rifle competition as camp surgeon. Par. 4, S. O. 86, Dept. of Tex., August 17, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending September 1, 1888.

Asst. Surgeon R. P. Crandall, detached from the "Saratoga" and wait orders.

P. A. Surgeon W. R. DuBose, detached from the "Jamestown" and to the "Constellation."

W. F. Arnold, Nashville, Tenn., commissioned Asst. Surgeon in the Navy August 18.

George A. Lung, Canandaigua, N. Y., commissioned Asst. Surgeon in the Navy August 18.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending August 27, 1888.

Surgeon H. W. Sawtelle, directed to proceed to San Diego, Cal., and inspect Service at said station. August 17, 1888.

Surgeon W. H. H. Hutton, to proceed to Way Cross, Ga., and assume charge of inspection and fumigation stations. August 18, 1888.

P. A. Surgeon F. M. Urquhart, to report to Surgeon Hutton for special duty. August 19, 1888.

Asst. Surgeon H. D. Geddings, appointed an Asst. Surgeon August 18, 1888. To report to Surgeon Hutton for special duty. August 19, 1888.

Asst. Surgeon C. P. Wertenbaker, appointed an Asst. Surgeon August 18, 1888. Assigned to duty at the port of Norfolk, Va., August 20, 1888.

Asst. Surgeon J. B. Stoner, to proceed to Charleston, S. C., for temporary duty. August 20, 1888.

P. A. Surgeon John Guitéras, to proceed to St. Mary's River, Fla., establish and take command of refuge camp at that point. The camp to be known as Camp Perry. August 22, 1888.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, SEPTEMBER 15, 1888.

No. 11.

ORIGINAL ARTICLES.

A PLEA FOR EARLY OPERATIVE INTERFERENCE IN CASES OF OBSCURE PELVIC PAIN; AND RECURRENT ATTACKS OF PELVIC INFLAMMATION IN WOMEN.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY RUFUS B. HALL, M.D.,
OF CINCINNATI, O.

It is quite possible that a large percentage of the cases described in many of the older text books as recurrent attacks of pelvic cellulitis and pelvic peritonitis, and now known and treated as such by many very competent physicians, have their origin in the Fallopian tubes, and is salpingitis in some of its forms, and the pelvic cellulitis and pelvic peritonitis are a secondary complication or an extension of the inflammation from the tubes; producing the well marked attacks of pelvic inflammation described by the old writers.

The cause of these recurrent attacks of pelvic inflammation, and the persistent pain that remained after the first attack, in so many of these cases, was comparatively unknown; until Mr. Lawson Tait made his first operations for the removal of the tube and ovaries for inflammatory diseases. This was the inauguration of a new operation that extended abdominal surgery into the pelvis, thereby greatly enlarging this field of surgery and extending its usefulness.

By this operation we have the means of not only relieving the suffering and pain of these otherwise incurable cases, but of saving the lives of suffering women, scarcely second to the McDowell operation. It is not likely that at the time he made his first operation, he even dreamed of the wonderful results for good, and the saving of human suffering and life the new operation would bring.

This was a step far in advance of the times, and one that attracted the attention of the whole medical world, and from the very nature of the operation, that it should meet with bitter opposition at first from many of the best men in the

medical profession is not surprising. Men with their old ideas, of the pathology of these cases of pelvic inflammation could not understand how the removal of the tubes could cure this disease.

No operation ever had so much vile abuse hurled against it as this one. The specimen removed completely changed the theory of the cause of pelvic inflammation in these cases as well as demonstrated conclusively that the tubes were the seat of the trouble, and while they remained filled with pus, or bound down by firm adhesions, that any exciting cause reproduced an attack of inflammation. And the complete cure of otherwise incurable cases, showed that the operation was justifiable, and like the "truth," the operation will prevail even against the opposition of its enemies. Amongst the most prominent objections to the operation were:

1. The difficulty of diagnosis in all cases.
2. That it unsexed the patient, and that the womanly attributes were lost. That she became coarse and ugly, and that beard grew most luxuriantly upon her heretofore beautiful face; all of which we now know to be base exaggerations.

The difficulty of separating the adhesions deep down in the pelvis, which we were told existed in the majority of these cases to a marked degree.

In answering these objections it may be said that the difficulty of diagnosis is not so great as it appears if we will inquire carefully into the clinical history of each case, which will aid us very much, and by exclusion we will, as a rule, arrive at a correct diagnosis. By vaginal examination, with the patient upon the side, with the thighs and legs well drawn up so the knees nearly touch the breast, an inflamed and distended tube may frequently be felt as a moderately, soft, boggy, irregular, rounded tumor; it is very tender to the touch, and cannot be pushed upward. The uterus is more or less fixed and misplaced, and every effort to replace it is extremely painful to the patient. The fact that in so many of these cases, the uterus is retroflexed and more or less fixed, is the cause of error in diagnosis in so many cases. The case is diagnosed as one of retroflexion of the uterus, and treated not infrequently by pessaries, much to the discomfort and danger of the patient.

Clinically it is impossible to separate the differ-

ent forms of salpingitis. Practically, it makes but little difference whether a case is one of hæmatosalpinx or pyosalpinx for the treatment is the same in one as in the other. In fact, they may be considered as varieties of the first. A large percentage of these cases are septic in their origin, the result of puerperal or gonorrhœal inflammation. And when the septic infection reaches the fimbriæ, it binds them together and to the ovaries, sealing up the opening, and the following inflammation causes them to adhere to the pelvic brim, and the intestine and uterus, thus explaining in a very satisfactory manner the reason why these subjects remain barren.

Notwithstanding this clinical fact has been demonstrated so many times by the specimens removed, we hear objections to the operation by prominent and leading practitioners, that the operation destroys the reproductive powers, yet in the great majority of cases the disease for which the operation is made, has done that years before the operation was suggested or performed.

A woman is necessarily barren who for years has been a sufferer from chronic ovaritis with adherent tubes, and the removal of the diseased structures will make her no worse than she was.

The belief that this operation will destroy the sexual desire of a woman, is founded wholly upon theory and prejudice as demonstrated by the statements of patients after recovery from the operation.

Again the same objections could be raised against ovariectomy for large tumors on equally good grounds, yet we never have this to oppose in that operation.

A woman suffering from this disease is compelled to suspend marital relations, for the act is always painful to her, and the existing pelvic pain is greatly increased after it; or she must endure it only as a matter of duty and with great pain. It is therefore evident that the operation for the removal of the diseased structures will not unsex her, but it will be found that it will enable her to perform her marital duties without her former great suffering, and it will reinstate her in her sexual functions.

And in place of her growing coarse and masculine in appearance, as claimed by many who object to the operation upon theory, the facts are that the womanly attributes are lost no more, after the artificial, than after the natural menopause. The general effect of the operation is the same as that of a woman who has suddenly and easily attained the menopause.

The affective sentiment remains unchanged, and they are none the less good and loving towards husband and friends.

The tone and voice are unaltered, the breasts do not atrophy; and the change is one devoid of all the hideous changes, claimed to occur after operation by those objecting to it.

The changes in the person of the subject are no more marked after this than after the McDowell operation, and the disease requiring it calls for surgical interference just as urgently as does the existence of a large tumor.

In speaking of the difficulty of separating the adhesions, that this difficulty does exist, and that they are the firmest and hardest to overcome encountered in any of the abdominal operations, every one who has had any very extended experience in this operation will testify.

We find not infrequently, and in almost all cases of long standing, after opening the abdominal cavity the pelvic organs completely matted together, and the pelvis roofed over by adherent coils of intestine, which are lifted with much difficulty before detecting the uterus, ovaries or tubes.

The separation of the tubes and ovaries are still more difficult, and if they are the seat of hæmatosis or pyosalpinx they not infrequently burst and spill their contents into the peritoneal cavity.

The uterus is bound down by adhesions which must be broken up in all cases.

The hæmorrhage is very troublesome in some cases, but can be controlled by sponge pressure and hot water.

Notwithstanding all these difficulties are to be overcome in most cases, by proper drainage they recover as rapidly and easily as any other abdominal operation.

In fact, a greater per cent. recover after the operation than after operations for large cystic tumors.

All of these objections must be overcome before the operation will be endorsed by the profession at large, and the great masses of these suffering women can reap the benefit of the only operation that can relieve them.

While the originator of the operation for inflammatory diseases was struggling to enlighten the profession by the revelation of his operating room, he received no little criticism, much of which was unjust and some very personal, from men in high standing in the medical profession.

To this hostile feeling on the part of a few of the leading men of London, early in the history of the operation, is the cause of the feeling of opposition to it, existing among the members of the profession in our own country.

That the great majority of general practitioners are opposed to the operation for the removal of the uterine appendages for chronic inflammation, or are open enemies to it, I am convinced; and do not advise their otherwise incurable patients to have the only operation made that can afford them relief from almost constant suffering and constant danger, or save their lives. Why this should be so, is not difficult to understand when but a few years ago, so many leading specialists were arrayed against it. That this

disease does exist to a greater extent than is generally believed, has been recently shown by Dr. A. H. N. Lewers, and reported in the *British Gynecological Journal*, of August, 1887.

Very contradictory opinions have been held as to the absolute frequency with which dilatation of the tubes from various forms of the disease occurred among the general population. In the *American Journal of Obstetrics*, for June, 1886, Dr. H. Coe published a paper in which he said: "Actual disease of the tubes is far less frequent than is generally believed." . . . "The question of absolute frequency of disease of the tubes is one that can only be settled by observations in the dead house of a general hospital, and with this object in view, Dr. Lewers examined the pelvic organs of a series of 100 consecutive cases in the post-mortem room of the London Hospital, and found diseases of the Fallopian tubes "restricting the expression to pyosalpinx, hæmatosalpinx and hydrosalpinx," was met with in seventeen cases out of 100 examined. In 302 post-mortems of women dying from all causes at Guy's Hospital, the pathologist found twelve cases of distension of the tubes. There were fourteen cases of chronic inflammatory disease about the tubes without distention. In the whole twenty-six, he says in his report it was probable that in seven pelvic inflammation was indirectly the cause of death through the medium of general peritonitis, intestinal obstruction, or in other ways."

It is somewhat a staggering thing to find 17 per cent. of women who die in an institution like the London Hospital, suffering from tubal disease. But the most remarkable thing in the paper of Dr. Lewers was the enormous fatality of these diseases. At the London Hospital it was 24 per cent., and at Guy's it would appear to be about 25 per cent., and the pathologists at the London, Guy's and Middlesex Hospitals showed a death-rate of more than 24 per cent., so the cry for relief by operation can not be gainsaid, especially when results show that these cases can be cured by operation with a mortality not exceeding 2 to 6 per cent. It requires time to demonstrate to the profession the benefits to be derived from the operation. And again, most general practitioners hesitate to advise an operation where to them the diagnosis is so uncertain, and life is put in jeopardy from it, let the risk to life be ever so little, so long as the patient can live without it. Thus months and years of invalid life is passed by their patients (provided the tube does not rupture and cause a fatal attack of peritonitis), who at each menstrual period are laid up eight to twelve days, hardly recovering from one attack until another one is upon them. Thus they are permitted to drift along month after month, suffering, as one of my patients recently operated upon expressed to me, "the torments of

the damned;" while their physicians, forgetful of their responsibility as the medical adviser of these cases, neglect to advise the operation, and if one is suggested it is often opposed until his patient meets the fate which befel the following unfortunate case, which I will briefly narrate:

Mrs. C., æt. 26, married at 22, one year later was confined at full term of gestation, which was followed by peritonitis of a severe type, from which she had a slow recovery. She ever after had pain in the right inguinal region and lower abdomen. This pain was much worse at each menstrual period. She menstruated irregularly both as to time and quantity. She had been treated by three different physicians for a period extending over three years.

They all stated that she had retroflexion of the uterus, with subinvolution, but frankly admitted that they were at a loss to account for the repeated attacks of pelvic inflammation which occurred from three to six times a year, from the least unusual exertion or exposure. These attacks of inflammation were so severe that many times her life was despaired of; and the attacks were becoming more frequent, and it required less exposure to excite one. Sexual intercourse was so painful that it had not been indulged in for more than two years on that account. Three years after the birth of her child I was called to take charge of the case. At that time she was in fair strength and flesh, and could be up and occupy an easy chair about half of the time two weeks out of every four, but could not even so much as walk about the room without aggravating the pain, which would keep her in bed for a day or two. But for two weeks at each menstrual period she could not leave her bed at all. She was accused of hysteria by her lady friends, and received but little sympathy from any but her own family.

By vaginal examination I detected the uterus retroflexed and fixed, pushed to the left side of the pelvis, while the right side was occupied by an irregular immovable mass, the size of a large orange, which was very sensitive to pressure. Pyosalpinx was diagnosed, and an operation for its removal advised, which was refused. After my most positive statement that there was no other known means of cure, I was discharged, and a physician employed who was willing to treat her as she had been treated for three years before, "expectantly." A few weeks later she had another attack of inflammation, from which she died on the fifth day, probably from rupture of the tube, as no post-mortem could be secured.

The other side of the picture is very forcibly depicted by the condensed history of the following cases operated upon:

Case 1.—Mrs. L., æt. 32, suffered from an attack of peritonitis after her first confinement in 1876, and for two weeks her life was despaired of.

She regained her strength very slowly, and ever after had pain in the right inguinal region and right side of the abdomen. She miscarried in March, 1878; this was followed by another attack of peritonitis, and it was six months before she could walk on account of the pain in the right side of the abdomen. In March, 1879, she aborted at the end of the sixth week of gestation; this was followed by another attack of peritonitis, and it was two months later before she could leave her bed. After this time she suffered with pain in the left side of the abdomen as well as the right. She never again became pregnant, although she used no means of preventing it. In 1880 her physician used cotton tampons to correct the retroflexion of the uterus, which was followed by a severe attack of peritonitis, which nearly cost her her life, and from that day for five years she was compelled to keep her bed from one-half to two-thirds of the time. She never passed a monthly period that she was not compelled to go to bed, and many of her periods she had attacks of peritonitis, during which her life was despaired of. For two years previous to my first visit she had been confined to her bed almost constantly; the only time she could be up was for one or two days just before her periods. Almost every period during this time was followed by an attack of peritonitis. During all this time she was never a day without pain. She was in a wretched state of exhaustion and emaciation; her weight would not exceed 85 or 90 pounds, when her former weight had been 130 pounds.

An operation for the removal of the tubes was made in September, 1887; the right was densely adherent and contained two ounces of pus. The left was adherent and thickened. She made a good recovery, has regained her usual weight of 130 pounds, and is relieved of all pain and is in perfect health.

Case 2.—Mrs. C. A., æt. 41, after her third confinement, which occurred in December, 1876, suffered from a severe attack of peritonitis, and it was four weeks before she could leave her bed, and two weeks later before she could move about her room. After the attack of peritonitis she suffered great pain in the left inguinal region, which was so severe that she required the daily attendance of her physician for three or four months. During that time all her suffering was located in the left ovarian region, and remained the same regardless of any treatment, except when under the influence of morphia. She was able to sit up part of each day after the first four weeks, but the pain was much worse if she moved about. She had menorrhagia, which continued without interruption for one year after the birth of her child. She was under the care of her physician for three years, but finding that the pain in the side remained the same in spite of the long-continued care, all treatment was discontinued from 1880 to

1883, but she suffered greatly at times from pain in her side, which grew worse from this time forward. She was never one hour without the pain after the attack of peritonitis, in 1876, until after the operation was performed. Fully half of the time for two years previous to the operation she was confined to her room, and much of this time to her bed. Intercourse was so painful and the pelvic pain so much more severe for days after it, that marital relations could not be endured for two years preceding the operation. She never became pregnant after the attack of peritonitis, although she was but thirty years of age at that time and took no precaution whatever to prevent conception. Thus she was practically unsexed as well as a hopeless and suffering invalid, with no hope of ever regaining her health in any other manner except by an operation for the removal of the diseased structures, which was made in September, 1887. On opening the abdomen I found the pelvic organs completely matted together. The left tube was adherent and distended by pus to the size of a small orange. The right tube was firmly adherent and thickened, but did not contain pus. The uterus was bound down in the cul-de-sac by old firm adhesions, which were thoroughly broken up. She made a rapid recovery, and was able to leave her bed on the 18th day, and return to her home on the 27th day entirely relieved of pain. Six months after the operation she said to me that she never once felt the old pain after the operation was made. She is now in perfect health, and only regrets that she did not have the operation performed years before.

Then if it is granted that this disease calls for surgical relief,—and I doubt if any one now disputes that a tube distended by pus can be cured in any other manner—why should the operation be postponed year after year, or until the patient is exhausted from the constant pain, and at the same time is in danger of a fatal termination from complications that will sooner or later surely come?

I believe that the best plan to pursue in these cases, after a period varying from 12 to 18 months of constant and proper care and treatment which is not followed by more than temporary relief, is to advise an operation for removal of the diseased structures, as the safest and best treatment. Safest because a very small per cent. die if they are properly cared for, and best because it is a permanent cure.

281 West Seventh Street.

DR. ROBERT BATTEY, of Rome, Ga.: There is much that I might say in discussion of the very interesting papers which have been read in our hearing, but time forbids that I should do more than offer a few comments upon the paper of Dr. Hall. If it were simply to correct a misapprehension of facts on the part of Dr. Hall, I certainly

should not consume the time of the Section. But I see before me numbers of young practitioners who may also be ignorant of the facts to which I shall call attention.

We are, sir, in the scientific discussions of the American Medical Association, in some sort recording for coming generations the history of American medicine. It therefore behooves us to see that that history is accurately and truthfully given. Dr. Hall alludes to the early struggles of Mr. Lawson Tait for the establishment of the operation in question, and speaks of the great opposition and prejudice which he had to encounter. He also goes on to allude to the hostility of the profession of Great Britain having extended to America, where the battle is being fought over again.

The author of the paper is doubtless ignorant of the fact that the contest to which he alludes was commenced in his own country, not in Great Britain, and by an obscure countryman of his own flesh and blood. That the first successful case put upon record was published in the *Atlanta Med. and Surg. Journal* for September, 1872. The hotly contested battle for the recognition of this operation by the profession was opened in the Medical Association of Georgia, in April, 1873, as appears by the proceedings of that body published in the *Atlanta Med. and Surg. Journal* for April and May, 1873. It was not until the year 1879 that any voice from Great Britain was heard in this contest. The first to speak upon the subject was not Mr. Lawson Tait, of Birmingham, as the author supposes, but Professor Alexander Russell Simpson, of Edinburgh.¹ A short time subsequent Mr. Lawson Tait mentions in the *British Medical Journal* (May 31, 1879, p. 813), three fatal cases of what he calls "removal of normal ovaries." Thus it will be seen that the contest over this operation had been waging in America, in the Medical Association of Georgia, in the Alabama Medical Association, in the American Gynæcological Society, in the American Medical Association, and in various medical periodicals in America, for more than six years before a word was heard from Mr. Lawson Tait on this subject.

In the International Medical Congress held in London in 1881, the criticisms which I heard were directed more at Mr. Lawson Tait the operator than at the operation itself. Spencer Wells and Matthews Duncan, who warmly espoused the conservative side, had both subjected patients of their own to the operation and approved it under exceptional conditions. At the meeting of this Congress Mr. Lawson Tait made the astounding discovery that his first case, which he had previously reported dead, had not died, but had actually recovered and been cured by the operation.

The author of the paper makes the just remark that Mr. Lawson Tait himself, in doing the oper-

ation originally, had but little conception of the grand results which were to grow out of it. If he will consult the records of history he will find that the obscure country doctor in Georgia to whom I have alluded had a full conception of these results six or seven years before the voice of Mr. Tait was heard in the matter. Indeed, so little importance did Mr. Tait attach to the operation, by his own showing,² as late as 1879 he had mentioned the matter to but a single individual in the wide world, Dr. Chadwick, of Boston, whose recollection entirely failed to recall any such mention. I submit, in the whole history of medicine and surgery, there is no parallel instance of a great discovery being made, destined to a grand career of usefulness throughout the coming generations, with a clear view of the future results, its author concealing in his own bosom, from his most intimate associates, all intimation of it, hiding his light under a bushel for seven long years, and then timidly lifting its edge and disclosing to the world a faint glimmering of his work; and after nine long years placing his light upon a candlestick and dragging forth the dead from the grave to emblazon the glory of his achievement.

In September, 1872, the Georgia country doctor, in reporting his successful case, says: "As far as my means of information enable me to judge, this operation is unique in the annals of surgery." In April, 1873, he also says, before the Medical Association of Georgia: "Since our last convocation in the city of Columbus I have felt it to be my duty to enter the domain of surgery, and carve out for myself a new pathway through consecrated ground upon which the foot of man has not dared wittingly to tread. . . . What I propose is this: ovariectomy to determine the change of life, for any grave disease which is incurable without it, and which is curable with it. But it may be asked, what necessity is there for surgical interference in these cases? I answer, it is necessary because the pathological conditions for which the remedy is proposed are, 1, destructive of human life; 2, destructive of human health; 3, destructive of human reason; 4, destructive of human happiness; 5, incurable by the recognized resources of our art." So much for America in 1872-73.

In the year 1873, while this operation was agitating the profession of the whole country through its medical journals, Mr. Lawson Tait published his prize essay upon "Diseases of the Ovaries," in which he makes no mention whatever of having done this operation or even of having contemplated it. On the 31st of May, 1879, in the *British Medical Journal*, Mr. Tait, with characteristic modesty, under the heading "Removal of Normal Ovaries," says: "As a small contribution to the history of this proceeding I should like to

¹ British Medical Journal, May 24, 1879, p. 763.

² British Medical Journal, May 31, 1879, p. 813.

supplement Professor Simpson's paper by the statement that I have removed the ovaries for the arrest of hæmorrhage in cases of myoma three times, in all three with a fatal result. . . . It will thus be seen that the operation was performed in England five days after it was first performed in Germany, and sixteen days before it was performed by Dr. Battey."

For this long silence upon the part of Mr. Tait, withholding from the medical world all knowledge of the original work which he claims to have done, the excuse he gives is, "Between 1872 and 1878 were perilous times."³

The author of the paper dwells upon the change of life as one of the objects sought to be accomplished in this operation. Mr. Tait himself, on the other hand, disclaims any such purpose and says, "I cared nothing about the change of life, I care nothing about it now."⁴

DR. WM. GOODELL, of Philadelphia, while in the main he approved of Dr. Hall's paper, yet in his opinion it was liable to the charge of being too sweeping in its statements, and too likely to mislead the young practitioner into the idea that the knife is the only remedy for ovarian and tubal disease. Now, is this true? Is extirpation the only remedy? Cannot the serum of hydrosalpinx, or the blood in hæmatosalpinx, be spontaneously absorbed? Further, even when pus is present in the tube or the ovary, can it not also be absorbed, or become inspissated and remain caseous and innocuous? Still further, it is not always easy to tell an ovarian cyst from a parovarian cyst, and in such doubtful cases tapping may very properly be invoked to decide the question. Peritonitis inflammation leading to abscess is often followed by complete restoration to health, although the ovaries and tubes must always meet with lesions during its existence. The only lesions of the ovaries and tubes which he was disposed to regard as almost but not wholly incurable, were those resulting from gonorrhœal infection. This form of disease follows mainly peritoneal surfaces, and rarely penetrates the planes of areolar tissue, or ends in abscesses which point and burst; but, on the other hand, the adhesions, distortions and dislocations of the womb and of its appendages were of the worst kind, and these evils could rarely be remedied by other than the radical operation. Yet even here he had cured by constitutional measures.

It depends very much on the social position of the woman how she should be treated for tubal and ovarian disease. If she were crippled by the local trouble and were too poor to afford the time or the expense for therapeutic measures, a resort to an operation might be imperative. On the other hand, if she were so situated as to be able to undergo a long and expensive treatment, such as the rest treatment demands, he (Dr. G.), would

almost always advise such a course. By it he had not always succeeded, but by it he had repeatedly restored women to health whose ovaries and tubes were palpably diseased, and had been doomed to the knife by very competent surgeons. Every year women were sent to him to have their appendages removed, who were relieved of all their sufferings by the massage, electricity, and other therapeutic measures of the rest treatment, conjoined with local applications or other local measures.

He was willing to admit that the radical operation was the surer remedy and certainly the more brilliant one. But there were two objections to resorting to it as the only one: Firstly. There was in his mind no doubt that in time the sexual feeling, after the extirpation of the ovaries, became blunted and even extinguished. For a few months after oophorectomy, not only might this feeling stay constant but, either by a general improvement in the whole organism, or by local irritation to the ovarian nerves, it might become even aggressive. This unexpected increment has been noted by several observers; but as time goes on the reverse takes place. The committee appointed to inquire into the results of Imlach's operations found, in a considerable proportion, that there was a distinct loss of sexual feeling; in some to such an extent as to cause domestic unhappiness.

The second objection to the radical operation lies in the fact that death ensues in a number of cases, the ratio of course varying with the severity of the operation and with the skill of the operator. But life is sweet, and very precious; and the surgeon should consider this when dealing with those whose diseases are not necessarily fatal, but generally are merely annoyances or grievances. Yet so little stress is laid upon this point, and so much upon a single phenomenal success of some highly skilled operator, that every medical graduate with a surgical bent is ambitious to remove the uterine appendages. The result is, that far too often the operation is performed and the woman mutilated, without an adequate reason—indeed, sometimes he feared, without any other reason than that the ovaries were deemed the scapegoats of all woman's ailments—whether mental or physical. Another result, and a sad one to contemplate, is that many lives have been needlessly sacrificed. He himself had had a run, his last one, of twenty-seven cases with but one death. Yet he had keenly felt this single death, because, although the ovaries were greatly diseased by papilloma, and the lady was more or less of an invalid, her life was not in any immediate danger and she would have yet been an attractive member of the home circle.

DR. HALL, in reply to Dr. Goodell's remarks, said: I quite agree in every particular; in fact, I advocated this very plan of treatment in the last sentence but one in my paper, and how the

³ Medical News, July, 1886, p. 26.

⁴ Atlanta Med. and Surg. Journal, March, 1887, p. 34.

doctor could overlook the statement I cannot understand. So far as the statement in reference to the Imlach statistics is concerned, I am convinced that no honest and fair-minded man can read the report of that committee and say that it is an honest and true report of the facts in the case. It was a question of expelling Dr. Imlach from the Staff of the Liverpool Hospital, and not one of an honest and true report of the facts in the matter. In reference to the statement by one of the gentlemen that Tait was careless in the examination of the tubes removed, and would not permit any one witnessing his operations to examine the specimens removed. I must say in justice to Mr. Tait, that during all the long time I was with him, he permitted the most thorough and complete examination of any or all specimens removed.

In reply to Dr. Battey, it appears that he has wholly overlooked the title of my paper "*A Plea for Early Operative Interference in cases of Obscure Pelvic Pain and Recurrent Attacks of Pelvic Inflammation in Women*"—as well as to misunderstand or pervert the sentence referring to the operation. I did not question his right to the priority of "normal ovariectomy," the name he first gave it, which after a time was found not to be broad enough to include all the cases operated upon after it was found that the operation was not restricted to ovaries that were normal. Then the broader term of "Battey's operation" was substituted for the former. His name, as I understand it, continues to be associated by the profession with the operation as performed for the production of an artificial menopause for reflex trouble, or what may be called "neurosis," and not for the cure of *inflammatory diseases*. While this name is suitable within the limits he laid down for it, it does not include the more extended procedure of removal of the uterine appendages for *chronic inflammatory diseases* that Tait's name is so intimately associated with. Or we might say the operation on one hand for the *cure of vague nerve symptoms* by the production of an artificial menopause, as against the operation on the other hand for the *relief of pain* and cure of *actual diseases*. The pathology in the two cases is different, the theory upon which the operation is performed in each case is widely divergent from each other, and the clinical histories of the patients, and the technique by which their diseases are proposed to be relieved, presents irreconcilable differences. Until, therefore, Dr. Battey gets the idea out of his mind that there is no difference between the operation that goes by his name and Tait's operation, he will be continually accusing others of appropriating the results of his labors. I made the statement in my paper that Tait was the originator of the operation for the removal of the uterine appendages for *chronic inflammatory diseases*; that I am correct in this statement I am

convinced. Notwithstanding the fact that the distinguished gentleman has occupied more than one hour in discussing the point of priority of "Battey's operation,"—a point that we have always accorded him—and by his abuse and sharp hits at Mr. Tait he has evoked the plaudits of this Society, yet he has not convinced any one that Tait is not the originator of the operation for the removal of the uterine appendages for *inflammatory diseases*. It appears to me a little queer that the Doctor should go wholly outside of my paper and dwell so long upon a point that was not touched upon at all in it. I did not discuss the priority of the operation only so far as it pertained to *inflammatory diseases*.

The question of priority of the operation of removal of the ovaries and tubes not the seat of large tumors, is a question that I did not wish to bring before this Society, as no good could come from the discussion of the subject, and as an American I would much prefer to see America have the honor of it; but this has been made a text for the greater part of the discussion on my paper to-day, wherein Dr. Battey has said that his first operation of August, 1872, antedated Tait's first operation by quite a number of years. Now, how are we to know the facts in this matter, when Tait says in his own writings that his first operation was made before that date? This is a question to be settled between Battey and Tait, not Battey and Hall. When Tait was receiving so much abuse from so many prominent men all over the world for removing the uterine appendages for *chronic inflammatory disease*, a condition that his enemies said only existed in "Birmingham or in his own perverted mind," if Dr. Battey had been an advocate of the operation for inflammatory disease, and had really been making the same operation, at the same time, for the cure of the same class of cases, would he have kept quiet all the time? Did he raise his voice in favor of an operation for these diseases, or in defence of the man who was receiving the abuse of the whole medical world while he was struggling to enlighten us upon this subject? No! I cannot find a word from him or his pen in justification of the operation for these diseases, or in defense of the man until the battle was won. It was Tait who fought the battle, and he will ever stand out as a mountain peak, towering high above all living men; and by all fair-minded men will ever be accorded his just rights in this matter, as the first man who directed the attention of the medical world to the necessities of this operation.

TOWN SCHOOLS IN SWITZERLAND.—The Police Directory of Berne has appointed a special commission to investigate over-pressure, school sanitation, and the whole field of school hygiene.

AN ANTISEPTIC SURGICAL CABINET.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1887.

BY H. LANDIS GETZ, M.D.,

MARSHALLTOWN, IA.

It is not my purpose to discuss in detail the merits of antiseptic surgery, when and why to be practiced, although for fourteen years practicing and believing in the utmost cleanliness in the treatment of all wounds, especially where healing without suppuration should be anticipated, avoiding so far as possible the use of chemical agents in the cleansing of fresh wounds, because I believed, as I now do, that the chemical agents, if brought in contact with the surface of the fresh wound, when of sufficient strength to destroy germ life, would also retard or prevent union by first intention. Few, if any, ovariologists longer use the once highly recommended carbolic acid spray immediately over the open abdominal cavity, because believed, or found to be, deleterious to the patient, as well as inconvenient and annoying to the operator and his assistants. In looking over and comparing the instructions of various authors (surgical and gynecological) in reference to the preparation of the apartment in which is to be performed a laparotomy, the instructions, as you well know, are substantially found to be uniform.

Having had occasion in several instances to prepare apartments for ovarian or similar operations, it occurred to me that where laparotomies were indicated, as in rupture of the uterus during labor, in case of gunshot wound of the abdomen, or other injury or condition, requiring the opening or exploration of the abdominal cavity, the recommended removal of all paper from side walls, of whitewashing, and all other disinfecting processes to be carried out, would require much more time than the average patient, under circumstances as just described, could possibly spare. Reasoning thus and remembering that I had read in a comparatively recent publication on gynecology as follows: "It is evident that ovariologists must devise some means by which the air is or can be purified without being innocuous to the wound surface." This led me to further look up the literature upon this subject, in issues to date. Not finding anything that was calculated to fill the above suggested need, I designed the appliance, the construction of which will be now described to you, and also its advantages, conveniences, etc., as they pertain to major surgical operations, more especially in laparotomy, where I believe the most scrupulous antiseptic environment should be instituted.

Description and Construction.—The skeleton or frame of cabinet consists of six poles, six feet long, one inch in diameter and round, and one pole of same thickness seven feet long. These are set up about the window which has been selected

to furnish light. They are held together by a few nails and a few hooks made out of screw eyes, in the manner you here see. One rod is fastened horizontally across the top of window, not less than seven feet from the floor. Into this rod or fastening are placed two screw eyes closed six feet apart, to come at equal distance from the sides of window frame; into each end of two other six foot rods is fastened a screw eye, opened so as to

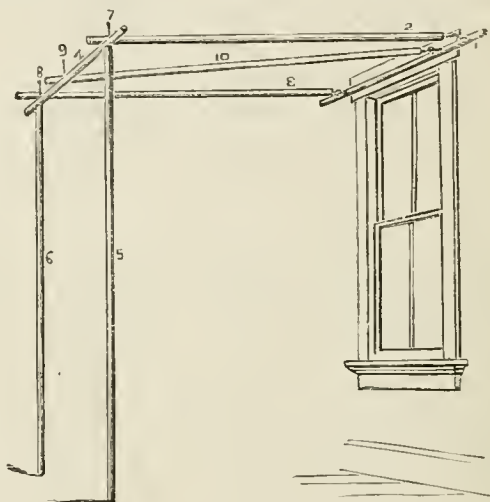


FIGURE 1.

1. Rod with three screw-eyes secured with common screw to top of window frame.

2 and 3. Outside rods for top of cabinet, with small hooks in one end, screw-eyes opened will answer; these hook in screw-eyes in rod 1; the other ends of rods Nos. 2 and 3 rest on rod No. 4, which rests immediately over rods 5 and 6. A hole is bored with a common gimlet through the lower ends of rods Nos. 2 and 3, thence through the outer ends of rod No. 4, and then vertically into the upper ends of rods 5 and 6; about an 8- or 10-penny wire nail is then placed into the bore to hold the rods in position; nails are shown by figs. 7, 8 and 9 before being sunken into hole; rod 10 is placed diagonally across top of frame and fastened as other rods; this braces firmly the entire frame.

form a hook; these are now hooked into the screw eyes in rods fastened over window, as already described, about six feet from window and just opposite the screw eyes in rod fastened transversely over window are set in a vertical position two rods six feet high; into the upper end of each of these a hole is bored with a gimlet, admitting a common tenpenny wire nail. Upon the top of these upright rods are now placed the rods which have been hooked to the rod over window. A rod is now laid across the top of the two upright rods and a hole bored, of size as just described, through the transverse rod and through the rods sloping from window to uprights, to correspond with the hole in top of upright rods. A rod is now fastened by screw eyes (used in manner as already indicated) diagonally from the transverse rod over window to the transverse rod over uprights, and this secures the frame firmly. We are now prepared to cover the frame, or, rather, supply the antiseptic side walls, top and floor. This is best made from bleached dairy cloth about forty inches wide. Of this, two

widths are necessary to cover the top, floor and each side, except the window. The two widths forming the top covering are sewed together for a distance, reaching from the rod fastened over the window transversely and over the horizontal rod placed over the two upright rods, thence downward to a point about the height of an operating table. This forms the roof or top and the side wall opposite the window. The two lateral side walls are cut of length to reach, and are suspended from the *slanting* rods, attached to upper and lower transverse rods. The floor is covered by same material, especially if there has not been ample time to thoroughly cleanse and disinfect the same or take up carpet.

Prior to suspending the cloth over frame and just before the patient is brought to the operating table, the cloth is dipped in a solution of corrosive

of operating table to floor, an extra piece of the antiseptic cloth. All sides are firmly drawn and secured upon the rods by small hooks fastened into the latter, and upon the floor and side walls by tacks, and at the corners or junctions by pins, except one side wall, where the two widths of cloth are allowed to overlap, and from which the operator and assistants enter and exit. The arrangement upon the interior of the cabinet and about the patient is precisely as when operating without the device. A valvular opening may be made into the side wall of the cabinet, through which may be conveniently passed instruments, etc., by an assistant.

NOTE: To be prepared for all emergencies, there should be six assistants, three of whom must be within the cabinet and three without, one of the latter to administer the anæsthetics,

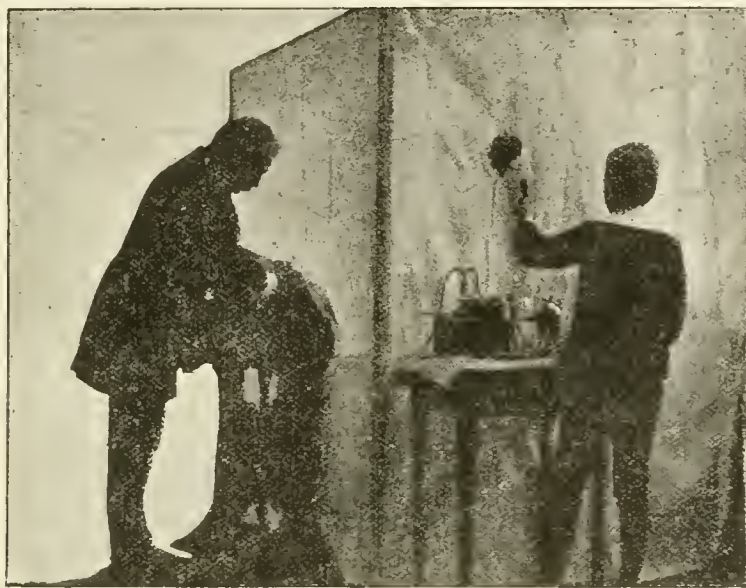


FIGURE 2.

sublimite, 1 to 500, or 1 to 1,000; the operating table is so placed under the canopy that the patient's feet shall be toward the window; the patient's head, neck and upper part of thorax shall be outside of canopy opposite window; the side of canopy opposite window, which has been sewed together, and which reaches well to the floor, is now drawn closely down to the patient's chest to the end of the seam, which should now be open sufficiently high to admit of the cloth being firmly drawn over the frame to avoid folds, which would in a large degree deflect the light from the open abdominal cavity, instead of into it, as is the case when the cloth is firmly drawn and somewhat arched, and each width is then continued to the floor about each side of the table. There is now drawn from one vertical rod to the other, extending in width from under side

and the other two to make themselves generally useful, by handing to operator or his assistants, through the valvular opening in the side wall of the cabinet, such special instruments, water, etc., as may be needed; or if the operation is prolonged and the antiseptic cloth becomes dry, to maintain its moisture by spraying the selected antiseptic fluid by steam atomizer, or other suitable appliance, from within outward against the cloth, or it may be sprayed from without inward against the cloth, *being careful* not to carry the spray through the cloth into the open abdominal cavity.

ADVANTAGES OF THE CABINET.

1. The air is purified by process proving innocuous to the wound surface.

2. It can be always easily and quickly constructed.

3. It is cheap, simple and withal efficient.

4. It admits of a moderate circulation of air, and yet prevents decided currents of air.

5. By it may be used corrosive sublimate, or other germicide, of sufficient strength to be certainly fatal to all germ life, without in the least degree endangering the patient, or being inconvenient or unpleasant to the operator or his assistants.

6. By it is utilized, condensed and reflected all the light to be obtained from window, the abdominal cavity being nicely lighted in all parts, so that the reflecting mirror is not a necessity, even when there is a poor supply of light, on account of a small window or a cloudy day.

7. Operator cannot by accident or intent witness patient's face, so that he is not in any manner disconcerted by the appearance of the patient.

[The cloth should be doubled between the operator and the patient's face.]

8. The assistant who administers the anæsthetics cannot witness the operation, and consequently will be less likely to forget his duty, namely, that of keeping steadily eye and mind upon the patient and effects of the anæsthetics.

9. By its use is prevented largely the circulation of the chloroform or ether-laden atmosphere over the open abdominal cavity. Both agents being highly volatile are cooling and drying in their effects upon the surface with which they come in contact, and both of these conditions are undesirable in laparotomy, the maintenance of warmth and moisture being essential to successful results.

10. It is light and compact, may be easily transported, and can be kept in readiness for use at all times.

11. It may be used to advantage conjointly when all other known antiseptic measures are applied.

12. By its proper application a good antiseptic compartment is furnished, even in a room where carpets, wall paper, etc., etc., are undisturbed, and in this particular especially recommends itself, its moist walls catching particles of dust and germ element which may be in the atmosphere, and the strong solution of corrosive sublimate which is used in moistening the cloth walls of the cabinet must be certainly fatal to germ life when coming in contact.

To further perfect this device, I propose supplying air to the patient, operator and assistants from (as a matter of convenience) the same window from whence is derived the light for operation, without opening the window and without changing in a noticeable degree the temperature of the room, although the outside temperature may be at zero or lower. The objects of the device are :

1. To furnish the patient (in the event of evidences of collapse from the effects of the anæsthetic

ics, or other cause) promptly an abundant supply of pure air, without changing the temperature of room, and thus proving detrimental to the patient by affecting the open abdomen and the exposed viscera.

The *second* object is to furnish to operator and assistants an abundance of pure air to breathe while they are working in an atmosphere with temperature of high degree, and which is trying and exhausting to operator and assistants, the latter sometimes failing you in the rendering of efficient service at a moment when you most need them. The patient, is supplied, by boring a hole into the lower lateral or lower transverse wide window sash, say three-fourths of an inch in diameter. Into this opening is placed a piece of metal pipe, and to this attached a piece of rubber tubing, which is carried along the floor to a point opposite the patient's head, when it is brought up and secured conveniently near the patient's head. This tube should have a shut-off valve near its end and to the end of tube should be attached a mouth-piece made of hard and soft rubber. This mouth-piece should have a set of valves inlet and outlet, to the outlet valve to be attached another tube identical with that attached to inlet valve. This main inlet and outlet tube can be made to supply and carry off the air for patient and the three assistants outside of the cabinet, and the three assistants and operator within cabinet are provided for in the same manner by a separate set of tubes. From the main tubes, inlet and outlet, are taken smaller tubes, and these of sufficient length to allow operator and assistants to move about with ease ; to these small tubes are attached the mouth-pieces, with entrance and exit valves, and the mouthpieces held in place by rubber bands, or other suitable contrivance. The individual supply and exit tubes, are secured one upon either side of the head, in such a manner that they will not in any degree inconvenience the operator or assistants. The main inlet and exit tubes for operator and assistants must always enter from the top of cabinet. In cold weather the iron tube, which is secured in the window sash, and to which at its opposite end is attached the rubber tubing, should be at least eighteen inches in length, and a lamp placed under same to heat the metal tube, and thus warm the air ; or a better, although more complicated, device may be used by having a small coil of pipe surrounded by hot water, and a thermometer kept in same, to indicate the temperature of air inhaled. The main exhaling tube is attached to the window sash in any manner most convenient. A convenient mode of attaching these tubes to the window will be found in taking a strip of wood, say four or six inches wide, made to slide one part into the other, similar to the patent window screens, so that it can be readily made to fit a wide or narrow window ; this appliance to have the necessary attachments for all en-

trance or exit tubes. The same may be placed into the window, as is most convenient, by raising lower sash or dropping upper one.

204 East Main Street, Marshalltown, Ia.

DR. WELLER VAN HOOK, of Chicago: I would like to inform the gentleman that Dr. Prince, of Illinois, is now using in his daily clinics an apparatus by which he sterilizes all the air used in his operating room. Everything in the room is kept in a constant state of asepsis. The effectiveness of the process has been tested a number of times, he tells me, by introducing into the room slips of sterilized gelatine, and seeing whether colonies of germs would grow upon them or not.

I would suggest that a single layer of gauze, like that used in Dr. Getz' cabinet, is not sufficient in thickness to prevent the passage of micro-organisms through it. This might be attained by means of a spray kept playing on the gauze all the time.

No operating room will ever be made aseptic, however, for the reason that every operator carries with him, either in his nostrils or in his mouth, enough germs to poison the entire mass of humanity. The only reason that our patients are protected is because the germs are enclosed in masses of decaying food, and thus prevented from being carried into the wound. The atmosphere which is carried from the lungs in expiration is in a comparatively aseptic condition. This is due to the fact that the air has been made sterile by means of contact with the moist mucous membrane of the respiratory passages.

DR. GETZ remarked that he made provision for the sterilizing of air in his cabinet by means of tubes carrying air into the room from without. "I do not claim for it a perfectly sterilized condition, such as could be attained if the cabinet were stationary; but it must be remembered that this is intended to be carried around from place to place, and it is so constructed that it can be put up or removed within the space of a very few minutes. It is thus available for all manner of operations."

ALCOHOLIC INEBRIETY, AS RELATED TO RESPONSIBILITY, AND CRIMINAL JURISPRUDENCE.

Read in the Section on Medical Jurisprudence at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY T. L. WRIGHT, M.D.,
OF BELLEFONTAINE, OHIO.

Researches relating to the effects of habitual drunkenness on the structure of the heart and blood-vessels; and the known connection which often exists between heart disease and insanity—

especially described by Dr. Wm. Julius Mickle in his recent Goulstonian lectures—open a door for investigating the influence of inebriety upon the mental and moral movements. That the heart is very likely to become dilated in the habitual drunkard, when its pulsations increase in frequency from seventy beats per minute, to at least eighty-five per minute as a stated thing, is apparent. For the latter figures represent an extra and unnatural labor imposed upon the heart of nearly eight millions of beats per year—a change of heart beat from thirty-six millions to forty-four millions, in round numbers per annum. And that the large arteries also must sympathize and suffer with the heart is evident, for they necessarily become enlarged, lax, and bagging, as their tonicity and elasticity are gradually weakened or destroyed by constant and violent stretching. Of course such a state of the circulation, at one time strained and over-wrought, at another powerless and creeping, but with a heart beat always rapid, favors the advent of melancholy moods, leading to despondency and suicidal insanity.

It is obviously impossible, in a brief paper, to go over the whole field of the mental and moral disabilities imposed by alcoholic indulgence. I will therefore omit further reference to the changes and diseases of the circulation as factors in the disturbance, or the destruction of the reasoning faculties, and confine myself to the moral and intellectual incapacities directly traceable to the toxic impression of alcohol upon the nervous system.

The anæsthetic, the benumbing, the paralyzing influence of alcohol upon the nervous system, and especially upon common sensation, always darkens knowledge and misleads the judgment. This follows from the fact that accurate perceptions are wholly dependent upon definite and normal sensations. When the senses are disturbed and impaired, perceptions are correspondingly disturbed and impaired; and they are unable to present to the mind facts as they truly are, as they really exist in the surroundings. The fine shadows, and uncertainties and doubts, which invariably attend all human transactions, escape the notice of a man who is intoxicated; and being unperceived by him, he imagines they do not exist. Every thing has, to his mind, the quality and energy of absolute demonstration. He never hesitates, never doubts. He is therefore a bad, as well as a dangerous witness in a court of justice, and particularly in criminal proceedings, where he is very likely to appear: bad from defective knowledge, and dangerous from a morbid positiveness in conviction and assertion. It seems probable, indeed, that a drunken witness testifying as to events observed while sober, is more trustworthy than a sober witness testifying as to events observed while intoxicated.

¹ See Address "On the Heart and Circulation of the Inebriate Classes," by Dr. B. W. Richardson, in Proceedings of the International Congress on Inebriety, p. 32. London, 1887.

The drunken man is always in a state of partial anæsthesia. Everybody dislikes the familiar approach of a person thoroughly intoxicated. The sense of feeling in such an individual is benumbed, and he seizes the person of any one near him in a rude and rough manner. His touch, or rather his grasp is painful because it is violent. The inebriate unconsciously exerts a considerable degree of force in his movements in order that he may be assured, or may feel that he really is in contact with persons or things exterior to him.

This imperfection in the sense of touch is one of the indications of partial paralysis in the nervous system at large. Indeed, the general insensibility of nerve arising from alcoholic influence will become apparent upon a very superficial investigation. The muscular sense is greatly obtunded, as is evinced by the staggering gait, the impeded articulation, the unfixed eye, and the distorted countenance. The senses of sight, of hearing, and even taste and smell, likewise show evidences of disturbed and restricted function in various forms of illusion, hallucination and incapacity. Partial paralysis depresses the ordinary senses without exception when they are brought under the dominion of alcoholic liquors.

Paralysis, in whatever degree it exists, withdraws function in a corresponding degree from the control of volition. No effort of the will can remove, to the slightest extent the incapacities of paralysis. Apparent exceptions simply indicate imperfect paralysis. In this respect the effects of alcohol differ from those of opium and chloral and tobacco. Weakness, debility, prostration respond in some measure to the calls of volition; paralysis does not. Hence, the responsibility of inebriety is modified and peculiar. It differs from the responsibility of common narcotism; and very often, indeed, it is less in degree.

The organic nervous system of the alcoholic inebriate is equally and similarly affected with his nervous organism elsewhere. The drunken man perishes from cold more readily than the sober man. For, not only does alcohol abstract oxygen from the blood corpuscles, and thus "slow" the ordinary physiological combustion of the body—but it benumbs and paralyzes the heat centres,* and sensibly hinders and weakens their functions. Here is the point where alcohol becomes a valuable therapeutical agent in reducing abnormal temperature in disease. "Alcohol lowers, opium raises temperature," says Dr. Norman Kerr in his recent work on inebriety. Alcohol paralyzes universally, opium does not.

The paralyzing property of alcohol is that through which it is enabled to masquerade in the

character of a food; a food indeed, which possesses in its own nature no single suspicion of nutriment; a food "in a certain sense" as it is described; in brief, a "waste-restraining food," whatever that may be. The inquiry arises: What are the achievements of such a food in building up and sustaining the physical organization? The answer appears to be this: When eggs, milk, beef, potatoes, etc., have constructed and nourished the human body, alcohol, by its paralyzing powers and properties, interferes with, and prevents the natural and physiological waste of the organism; and thus it keeps locked up in the system for a period of time longer than is natural, matters which otherwise would have been cast out as effete and poisonous. Audacious assumption will sometimes deceive the very elect; and although alcohol is compelled to take a dark and tortuous way to attain to the unsubstantial semblance of "food," yet the false pretense may, in thoughtless minds, rehabilitate somewhat, a reputation badly tattered.

Still these disabilities imposed upon the several senses, and upon the universal nervous powers through paralysis, do not fully measure the disasters brought upon the human capacities and potentialities by alcohol. These wrongs and injuries are, indeed, merely elementary; but being elementary and alphabetical, they are the keys to the interpretation of whole libraries of moral, and mental, and physical, and constitutional debasement and destruction.

It is impossible for a mind, when the senses are obscured and lifeless, to receive accurate knowledge of persons and things exterior to it. But if it were possible that such knowledge should by some means become the property of mind, still, universal paralysis of the brain (although limited in degree) would prevent the normal use of the reasoning faculties, and knowledge would become the basis of mistaken and perverted conclusions. Again: If, perchance, the reasoning faculties should act with precision and clearness, the coördinating centres of the brain would be incapacitated for analyzing the relative quality of convictions, and the moral activities would be found halting and repressed. Moreover: Even if the moral nature was not thus embarrassed, still, this same brain paralysis would dull those finer distinctions both as to conviction and duty which are essential to the formulation of proper and rational motive and choice—perplexing the will and precipitating an irrelevant and irrational conduct.

When the receptive faculties are in good order, it may be presumed that all other mental powers are probably in like order. I mean as a general rule, for I am not ignorant that moral insanity and imbecility of will are held by many to present independent features. On the other hand, if the receptive mental faculties are impeded, or modified, or insensible, it is presumed that most com-

* Dr. Isaac Ott places these centres: "1st, in front of, and beneath the corpus striatum; 2d, the parts on the median side of the nodus curiosus; 3d, the parts about Schiff's crying centre; 4th, the anterior end of the optic thalamus. These centres are exciting or inhibitory, according to the kind of impression sent into them by the peripheral nerve endings." They are inhibited by the paralysis of alcohol.

monly all the other faculties, both of mind and sensibility, are likewise defective and unreliable. Dr. T. D. Crothers has directed attention to a mental state sometimes found in the inebriate, which he has called alcoholic trance. If a person cannot see clearly, hear correctly, smell, taste and feel accurately, if indeed, he is in a condition of partial paralysis in his entire nervous system, he is very liable to lose his sense of personal identity, so far at least as to be oblivious to what transpires with relation to himself while in that state of impaired sensibility. For it is the unimpeded action of the senses, and the feeling of perfect concord amongst them—one with another—which give to a man the idea of his individual existence, his own, his personal identity. Now it is common for a person to say after recovering from intoxication, "I do not remember anything that occurred." While this may be false, it also may be true, for the reason based upon science, as well as upon experience, namely, the drunken man is in every instance partially paralyzed all through. He is thus very prone to lose his sense of personal identity, that is, his sense of relationship with events and things exterior to him. He must be liable to lose his right sense of relationship with other persons and other things, because, being partially paralyzed throughout his entire nervous organism, he has no just, and regular, and natural sense of anything whatever. In fact the identity of a person which is associated with the impeded nervous power of partial paralysis, is to all intents and purposes, the identity of some other, some imaginary person with whom when restored to its normal condition the mind can have no links or chains of association. Thus considerable modifications in the sensibilities may eventuate in modifications in the sense of relationship which the sound mind should sustain to all things else. Hence, though there may be a modified sense of personal identity incident to modified sensibility of nerve, this is not always recognized in memory when the mental powers resume their natural purity and perfection.

These degradations are inseparable from the use and influence of alcohol. They are totally incompatible with healthfulness of body, clearness of intellect, and strength and delicacy of morality.

The degenerations and disabilities placed upon the human organism by alcohol are of universal application and are practically of the same nature in all cases. Therefore from whatever position they are viewed they present the same appearances and conduct to the same conclusions. Examine, for example, the responsibilities of the inebriate from the standpoint of consciousness. Take the definition of Wundt, that consciousness is psychologically a unification, although itself a unit. According to this author, consciousness is not simply "a knowledge," or "function," or "condition." He tries to tell what it is, not what

it is for, or what it does. There is no nerve-centre of consciousness, and the entire organism is essential to its exposition. "Thus perception, representation, idea, feeling, volition, form the continuity called consciousness—of which only tautological definitions can be formulated. Taken as a whole, consciousness embraces the following movements: first, impression; second, transmission to a nerve-centre; third, general or vague perceptions; fourth, special perception (called also apperception); fifth, voluntary reaction; and sixth, transmission to the motor nerves." But all these elementary constituents of consciousness are benumbed, dulled, hindered, dwarfed in stature, repressed in function, and deranged in natural order of procession by the paralyzing influence of alcohol.

Not only is the rational faculty injured by the influence of alcohol, producing confused, incoherent, and inconsequent ideas and beliefs, but the moral attributes are debased in an equal degree. The paralysis of alcohol, although incomplete, fails not to overcome the finer and more etherial sensibilities, while it leaves the coarser ones comparatively unaffected. That is, it destroys the humanitarian sensibilities, leaving the purely animal ones nearly untouched. And this is, in effect, the suppression of the distinguishing characteristics of the human nature, and leaving in command the brutish and animal instincts, without check or monitor. What follows? The man does not wickedly and maliciously act *like* a brute, but he has become in reality a brute himself, through the loss or suppression of his humanizing sensibilities.

Latency of function is followed by difficulty, if not even impossibility, of function, through atrophy of structure. A curious exemplification of this principle is furnished by Dr. Livingstone, the famous traveler and philanthropist. He said that upon coming into the presence of his countrymen after years of absence among the black tribes of Africa, he was at home in everything except his own mother tongue. "I seemed to know the language perfectly, but the words I wanted would not come at my call."

Nothing is more common than that men, after drunkenness, are amazed at the shocking things they have done, or said, or thought, while in a state of intoxication—indicating the latent state of the moral nature in drunkenness. But if the inebriation is continuous or nearly so, that is, if it is habitual, the shocking thoughts do not become the subjects of rational review; and thus the latency of the moral sense becomes fixed, and congenial to an unsound and deformed reason. The mind may seem to know the nature of morality perfectly, but if morality is wanted, "it will not come at the call." It is therefore not surprising that steady drinking, even when not excessive, is more disastrous in the final outcome

than the convulsive sprees of the neurotic inebriate. In the latter, the intervening seasons of total abstinence prevent the establishment of habitual disability in the nervous powers; while in the habitual drunkard, nervous disabilities, latencies and inhibitions become perpetual, insurmountable, in a word, *constitutional*.

The chronic inebriate furnishes a ready and sure illustration of the foregoing facts and doctrines. He is debased and defective in every department of his nature. Physically, mentally, morally he is wounded, maimed, crippled, deformed, in equal degrees. Yet his moral deficiencies are the most obtrusive, because they lie most upon the surface. A gentleman of my acquaintance has been a steady drinker of ardent spirits for nearly thirty years. His moral nature is latent, if, indeed, he has any. He is not vicious or malignant, but he is an incessant and shameless, because motiveless, liar. With great coolness he will invent stories totally without foundation and on the most trifling subjects,—all the attendant circumstances and details being of the utmost exactness. And so he cackles on, and will continue so to do till the end of life.

Now this seems very foolish indeed, and likewise very inoffensive. But this man is, in truth, on the verge of insanity. Not only is he morally bankrupt, but his intellect is both sterile and disordered. Amongst the great army of the unrecognized insane there are none more common, or more really dangerous, than the chronic and steady drinkers of ardent spirits. These men in early life acquired the usual habits, both of thought and action, that belong to the average citizen. Automatically, with the guide and hints of the examples of others in their midst, they manage, without much effort, to keep in the ordinary grooves of daily life. If such a man is a farmer, by force of habit he farms as others do; and in a judicial inquiry, should that fact be established, it very likely determines nothing. If he is an artisan, or physician, or lawyer, he may, by automatism and example, pursue his avocation with reasonable success. But let some supreme crisis intervene, so as suddenly to throw him upon his own unaided powers; let instant rage or, what is more consonant with his nerve defect, jealousy, come over his mind and disposition, he will then be thrown out of the grooves of automatic life and, acting upon his own true nature, he will herald to the world his real condition. Then desperation, murder, suicide, true representatives of his actual mental state, will burst unexpectedly upon the scene. To the great body of chronic inebriates this crucial test of insanity is never applied; they live without recognition, and die with their dreadful infirmity unknown and unsuspected.

There is another large field of inquiry related to the jurisprudence of inebriety. It is that one opened by the property of alcohol which promotes

proliferation of the interstitial tissue. This field includes the whole organism, for the connective tissue goes everywhere. Dr. Sieveking asserts that "there is scarcely a degenerative condition of the body that may not result from the habitual use of ardent spirits."³ Dr. Maudsley speaks of that "more dangerous form of habitual indulgence in small quantities of wine and spirits throughout the day by which some active men of business endeavor to spur their overtaken energies."⁴ Alcoholic structural affections of the stomach, liver, kidneys and brain are familiar to all. They are invariably associated with physical changes in the connective tissue of the organism; and they originate from the persistent, the unremitting, the *habitual* influence of alcohol upon the bodily structure.

And this completes the tale of the essential departments of human nature—mind, soul, body. Each and every one is grievously and permanently disabled; and indeed wrecked, in the chronic inebriate.

THE EARLY REMOVAL OF ABDOMINAL CYSTIC TUMORS.

Read in the Section of Obstetrics and Gynecology, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1885.

BY C. R. REED, M.D.,
OF MIDDLEPORT, OHIO.

By the term "cystic tumor" in this paper will be included tumors having their origin or growing from the uterus or its appendages, the bulk of the tumor chiefly fluid and contained in a cyst or sack; uni or multilocular, of the ovary, the parovarium, the broad ligament, or the Fallopian tube. It was formerly the teaching and practice of ovariologists that the removal of cystic tumors of the abdominal cavity should be delayed until they had produced emaciation, or the fat in the abdominal walls had been absorbed; the general health began to suffer; the vital organs become injured to irritation, and the long-continued pressure of the peritoneum had rendered it tolerant of irritation and less disposed to inflammation than when the tumor was removed at an earlier stage.

But the teaching of modern abdominal surgery is to remove the cystic tumor as soon as the diagnosis is clear, while the general health is unimpaired and the tumor is simple in character, has formed no adhesions to surrounding tissues and its contents have not undergone degeneration. While the tumor is yet small and free from complications, its contents thin and flow readily through the canula, but little time will be needed for its removal, and it is now the generally received opinion that the time consumed in the operation is in a direct ratio with its success. The

³ Life Assurance, p. 59 (1878).

⁴ Pathology of Mind, chap. ix, p. 434 (Appleton, 1880).

long continuance of the anæsthesia and exposure of the abdominal organs to the atmosphere render the shock more severe and of longer continuance, thereby largely increasing the death list of the operation. Under modern aseptic surgery shock is one of the chief causes of death in abdominal section, and whatever tends to lessen its severity or shorten its duration increases the ratio of recoveries. That cases recover after operation which had existed five, ten, or even twenty years are but exceptions to the rule.

American authors differ widely on this question of early or late operation for the removal of abdominal cystic tumors, while European authorities advocate the early removal. Goodell "*Lessons in Gynecology*," p. 362, says: "The operation should not be performed when the cyst has first been discovered, but when it has grown so large as to distend the belly, and when the woman has become thin and her health has begun to fail.

The abdominal wall having become thinner, the incision will be proportionally shorter and shallower; that the patient being now less full-blooded both hæmorrhage and inflammation will be less likely to occur, and that the pressure and rubbing to which the peritoneum has been for some time subjected will make it less vulnerable, and therefore less likely to take on inflammatory action."¹ If this theory be true, the operation in the well nourished should be preceded by a full venesection.

Emmet, in his "*Principles and Practice of Gynecology*," p. 711, referring to the doctrine of delay, as taught by Goodell and others, says: "But, on the other hand, the patient was deprived of all chances of recovery when the removal was delayed until the vital powers became so much depressed that she could not recover from the shock of the operation. With greater experience in the method employed it has already been demonstrated, as we shall see hereafter, that all the advantages are now greatly in favor of an early operation, before adhesions have been formed."

Sir Spencer Wells, in his late work on "*Abdominal Tumors*," in speaking of palliation by tapping, says: "But this advice as to tapping, and especially as to renewed tapping, as a means of cure must be restricted absolutely, as I have before stated, to cases in which the cyst is single and the contents clear and non-albuminous. In all cases of multilocular or dermoid tumors, where the abdominal distension is sufficient to injure the general health or cause local suffering, there must be no faltering, no suggestion of alternatives or delay. Justice to the patient demands a positive recommendation of excision, and generally it should be accompanied by a warning against the danger of delay. Every one who takes upon himself the responsibility of such counsel should

have a clear idea of the base on which it rests. And it may be traced out summarily in this form. The health has already deteriorated, and though the tumor itself be neither malignant, inflamed, or suppurating, nor the seat of hæmorrhage, yet its mere presence is the cause of the patient's decline. To let things go from bad to worse without doing anything, especially as that worse is a certainty, would be acting against the very first principles of medical science. The presence of this morbid growth in the body may give rise to other diseases. The contents too, whatever they may have been at first, alter in their character and become less and less benign, and by too long waiting sympathetic morbid action may be set up in the corresponding organ and thus make the ablation of both imperative. Time, too, gives the opportunity for adhesions to form, for rupture or destructive peritonitis to occur. It is possible to operate too early as well as too late, to place a person's life in peril by operation before it is endangered by disease, just as it is possible, on the other hand, to delay operation until the powers of life are so exhausted that recovery after a severe operation is impossible. He further says that ordinary medical treatment by drastic purgatives and hydrogogues often do harm, and rarely good, and any specific medical treatment by iodine or bromine, or mercury, or gold, or, arsenic, or lime or potash, used with the hope of checking the growth of such tumors, is useless, and he further says: "I have become more and more disposed to advise the removal of an ovarian tumor as soon as its nature and connections can be clearly ascertained and it is beginning physically or mentally to do harm, since the risk of the operation under such circumstances is certainly less, and the possible evils of delay are eluded."

Sir James Y. Simpson, in speaking of the treatment of abdominal tumors, says: "He had no belief whatever that iodine, or mercury, or muriate of lime, or aqua potassa, or diuretics, or deobstruents, or aught else, was capable of absorbing and removing the complicated structure and contents of a multilocular cystic tumor of the ovary."

Matthews Duncan says: "We know of no one example of the cure otherwise than by the operation of Ephraim McDowell, of an ovarian dropsy, properly so called. Not one, however many may be found described, or whoever may be the describer. Cures by one or moreappings, cures by medicines, cures by spontaneous rupture, cures by advancing pregnancy have been, if not most egregious mistakes, almost certainly cures of parovarian cysts, whose history, as already known, quite accords with and explains such erroneous allegations."

Mr. Lawson Tait, in his late work on "*Pathology and Treatment of Diseases of the Ovaries*," pages 252 and 253, says: "The treatment of ova-

¹ Dr. Goodell, in the 2d edition of his work, corrects his statement as quoted above.

rian tumors by therapeutics need not be discussed, further than to say that it is limited to the administration of tonics to sustain the functions of the patient, or to correct some errant condition which might diminish the chances of success for the surgical treatment of the case. For the cure of an ovarian cystoma there is nothing known to have the slightest influence, save an operation for its removal, and those patients who unfortunately are led to believe that some drug or other, or some fanciful form of treatment will relieve them from the necessity of an operative ordeal, are only induced to waste time which is valuable and to run risks which may be avoided. Of tapping I have said as much as I think necessary, but here I may repeat what everyone knows now, that it never cures a tumor and that it only brings about complications. It is my firm belief that if ovarian and parovarian tumors were never tapped, but were removed early in their history, we should only have a casual mortality from the operation of ovariectomy. Tapping, therefore, in my practice has become only a palliation for tumors I could not remove.

Many other plans have been devised for the radical cure of ovarian tumors, but they are all now abandoned in favor of ovariectomy; and such methods of treatment as the injections of iodine, or the establishment of fistulous tracks, can only be justified under very exceptional circumstances. Before the re-introduction of the intra-peritoneal method (of treating the pedicle) by Dr. Keith, we used to delay the removal of an ovarian tumor as long as the patient could get about comfortably, and this was justified by the fact that with the clamp we got only about 75 per cent. of recoveries. But now that we can get 95, and when we might get 99 per cent. of recoveries, if there were no delayed or tapped cases, my rule is to remove an ovarian tumor as soon as it is discovered, and this will soon come to be the received practice. The earlier the operation is performed the more certain the patient is to recover, for the less likely are there to be any complications." Tait further says: "However advanced a case may be I never refuse to operate, for I have seen some of the most unpromising cases recover without interruptions."

I have quoted at some length from Sir Spencer Wells, Lawson Tait, and others, as their statements are corroborated by the following cases, with others that might be detailed, coming under our observation.

Case 1.—Mrs. S., aged 36, mother of several children, first noticed an enlargement or tumor of left ovarian region about January 1st, 1875. The tumor was of slow growth the first three or four months, then grew rapidly, when the pressure becoming great and refusing an operation for removal she was tapped June 23d, 1875, about seven months after the tumor was first noticed. The relief was entire for three months when the cyst

rapidly refilled. On October 7th she was again tapped, under protest, with relief for six weeks. The cyst then rapidly refilled, and tapping was again done November 29th, with but partial relief. The fluid removed the first two tapplings was thin and albuminous, now became thick, flocculent and purulent. She was now rapidly failing in nutrition and strength, and suffering severe pain in abdomen. On December 13th, fifteen days after last tapping, the fluid was again removed by trocar with much obstruction in flowing through the canula. It now became evident that each tapping prostrated her more, nausea and vomiting becoming frequent and the end rapidly approaching, and as we refused to tap her again, she and her friends consented to removal of the tumor, and about the 20th of December she was seen by Dr. Dunlap, of Springfield, Ohio. Dr. D. tapped her with a large aspirator, hoping that by again emptying the cyst she would recuperate sufficiently to undergo the operation of removal. She continued much the same, and on January 6th, 1876, the tumor was removed by Dr. D., Mrs. S. dying from shock one hour after the operation.

The tumor was a unilocular cyst without complications or adhesions and easily removed. We believe that had Mrs. S., and friends, consented to an early operation, while health and strength were good, she would have survived the operation, and that she was the victim of delay. The temporary relief usually following a first tapping deceives the patient and friends and leads them to believe that its occasional repetition will indefinitely prolong life. Of this deception she and her friends should be warned.

Case 2.—Miss S., aged 16, commenced menstrual life at 13, one year after which she observed an enlargement of the lower abdomen. This growth we are told slowly increased the first year, the general health suffering but little. The second year rapid development and failing in health and strength, though able to walk about. The tumor now so large as to displace the abdominal organs and greatly increase the circumference of the chest. Menstruation, heretofore irregular, now ceased. Her treatment was wholly medicinal, and no doubt an injury rather than a benefit to her. A consultation now resulted in a diagnosis of ovarian cyst, and its removal recommended and positively declined. She persistently refused an operation for relief, and rapidly became more emaciated and anæmic, nausea and vomiting and loss of appetite now became prominent symptoms. When we saw her first, November 2d, 1887, and diagnosed a large cystoma which was rapidly destroying life, and the end was near. We objected to any further medication and told her her only hope was in the removal of the growth which we did on the 5th of November. She bore the ether badly, vomited frequently during its administration, and also during the operation, which neces-

sarily prolonged it. The abdominal walls were free from fat and very thin, which made the tumor readily accessible, which was found to consist of three large cysts and several smaller ones, the walls of each thick and tough, and contents of each unlike. The large cyst in front and below was filled with thin fluid and readily emptied; the second with colloid contents and slowly flowed through the canula; the third had adhesions to the abdominal wall posteriorly, and contents so thick and dense that they would not flow through the tube and the wall had to be punctured with the scalpel and the semi-solid contents scooped out with the hand. The adhesions were broken up with the hand, the emptied cyst walls were brought through the incision. The tumor was found to grow from the left broad ligament, with a long, broad pedicle, which was tied with the Staffordshire knot.

The difficulty in evacuating the two latter cysts made the operation a long one. There was no hæmorrhage requiring ligature, the condition was one of anæmia. The abdominal organs were forced, by pressure, from their normal positions and did not occupy that place when the tumor was removed. The uterus and ovaries were small and healthy and were not disturbed. At the close of the operation the radial pulse was barely perceptible. The shock was great. After the anæsthesia passed off there were indications that she might rally, but she died two hours after the operation.

There is nothing unique or unusual about the above cases; they are given in detail as we think they teach a lesson. The life of the young girl was a sacrifice to her fear and dread of an operative ordeal. They teach us the utter inefficiency of a cure by medication; that the removal of the cystic tumor is her only hope and safety; that tapping is but temporary relief, a false hope, and complicates removal as a means of cure. The woman who has an abdominal cystic tumor should be told by the physician that its early removal while it is small and free from complications is almost free from danger, and warned of the danger of delay. Then will cystotomy be shorn of its terrors and the per cent. of recoveries in this country nearer approach that of Great Britain and Continental operators. Other cases have been seen by us that have been tapped again and again, and died. Others have passed away without even this temporary relief, and successful cases coming under our observation, operated on early, are not detailed here as they would be void of interest and extend this paper beyond its intended limits.

May, 1888.

RETINITIS HÆMORRHAGICA FOLLOWED BY GLAUCOMA.

BY KENT K. WHEELLOCK, M.D.,

PROFESSOR OF OPHTHALMOLOGY AND OTOTOLOGY IN THE
FT. WAYNE COLLEGE OF MEDICINE.

March 19, 1888, Mrs. Esther Smith, æt. 71 years, widow, consulted me on account of an eye trouble. She stated that her vision had been somewhat obscured in her left eye for a few days, and that at the time of her visit she was quite unable to distinguish objects on account of everything being clothed in a deep purple color. Upon examination I found R.E.V. = $\frac{2}{3}\%$: + 1D. V. = $\frac{2}{3}\%$. L. E. V. = perception of form.

Ophthalmoscopic examination showed a large number of circular red spots in all parts of the fundus, macula especially presenting the appearance as seen in embolism of central artery of retina, except the hæmorrhage was not defined, but shaded off into other hæmorrhages. Tension normal. Patient well preserved, and gave no evidence of heart changes or vascular degenerations which I could detect. Fundus and vitreous hazy in certain strata. I prescribed sol. muriate of pilocarpine one-fourth per cent., teaspoonful to be taken every hour till sweating was induced. This was followed by amelioration of the distressing chromatic changes and by improvement of the vision, so that fingers could be counted in the temporal field. Pot. iodide was then ordered, with ungt. hydrargyri, lanoline as a base, rubbed over brow and temple. No especial change occurred subjectively beyond the gradual fading out of the purple color which before surrounded all objects. Objectively the hæmorrhagic spots faded and brightened with the usual persistency.

Finally, about the middle of May, tension began to increase slightly and a pinkish red blush stole over the sclerotic and circumcorneal area. Eserine was promptly applied, but acted badly. I advised operative procedure, but the patient was timid and could not consent.

On June 20, after an unusually bad night and intense circumorbital pain, the patient consented to an operation. Having grave doubts as to the success of any operative interference save enucleation, which the patient would not consent to except as a last resort, and fearing the possible extrusion of the ciliary body, vitreous, etc., if an iridectomy were done, by reason of sudden relief of the corneal counter-pressure, I elected to do a sclerotomy. As long as there was a fistulous opening in the line of the incision, which was not completed above, a small bridge being left for support, pain was not experienced. When this fistula closed the trouble returned with increased force, and the pain was less bearable by reason of the patient being reduced in nervous force. Seven days after the sclerotomy it was evident that another operation must follow. Seeing no evidence

THE BERLIN SEWAGE FARMS now yield a profit of two per cent. on the capital invested—a very favorable result, considering all things.

of undue pressure from behind following the sclerotomy, I did a large iridectomy downwards. Patient experienced complete relief of pain, and now, nearly three weeks after the operation, the eyeball is soft and has regained its normal appearance.

Ft. Wayne, Ind., July 16, 1888.

ABSTRACT OF PAPER ON THE HISTORY AND TRUE VALUE OF THOSE AIDS TO HEARING USU- ALLY TERMED ARTIFICIAL TYMPANIC MEMBRANES.

*Read before the Section of Otology of the British Medical Association,
August 10, 1888.*

BY LAWRENCE TURNBULL, M.D., PH.G.,
AURAL SURGEON TO THE JEFFERSON MEDICAL COLLEGE HOSPITAL,
ETC., PHILADELPHIA, PA.

I have endeavored to give a full history of the use and application of the various agents employed in the place of the natural membrana tympani. By this time we have arrived at some certain definite ideas as to the true value of these aids to hearing:

First, their importance to the health of the ear, by preventing dryness, and the general danger to the hearing from the want of the protecting power of the natural membrane.

Second, we can hear to a certain degree without the membrana tympani; but we cannot have perfect hearing without it.

Third, we have in the various agencies which have been employed not only the means of protecting and preventing the drying effects of the air, but also the prevention of the passage into the middle ear of injurious foreign agents, the prevention of disease from cold air or water, so apt to set up acute inflammation, followed by abscess in the mastoid or brain.

There are certain agents that we have individually found to perform the offices we have described, with the least injury to the ear, and still retain bone contact, make a certain amount of pressure, protect diseased parts and tend to the healing of the perforation. Satisfactory results have been obtained from the cotton ball, or pellets of "Yearsley." The objection to this was the tendency, which the ordinary cotton had to cause irritation, by bearing in its fibres bacteria and micrococci, also other foreign matters. Again, it sometimes fits so closely, owing to discharge or mucus on its surface, as to make a shut sac, and absolutely prevent the vibrations of the membrane, thus acting as a damper. These difficulties are overcome by employing corrosive sublimate solutions with "sublimate cotton," or a disk of sublimate gauze, moistened with fluid cosmoline, so as to make it more adhesive. When water with glycerine is employed the mixture will soon ferment in the ear and become irri-

tating, and causes inflammation. By treatment we can much sooner employ the artificial membrane, even when there is a slight suppurative process going on. The solution of the sublimate should not exceed in strength, one to four thousand, if stronger it gives pain. The patient is supplied with a dozen or two of these cotton pellets, attached to threads which have also been soaked in the solution. The fluid cosmoline or vaseline is to moisten the pellet, when about to be introduced if the parts are dry. The pellets are placed in position by means of the ordinary forceps, called tweezers, such as are found in every lady's work-basket, the thread must be cut off close, so as not to be seen. The second form is the india-rubber disk, cut out with the apparatus of Gruber, and introduced with the forceps, as seen illustrated in the writer's work.¹

We have discarded all the forms of apparatus which have any metallic spring, handle, etc., having found them always irritating and injurious, even our own modification, the stem of which we had carefully covered with rubber. We find the rubber curls up, and is destroyed, leaving the metal exposed.

We apply a disk of what is known in this country, as "Mead's adhesive plaster," which is found to be perfectly pliable and antiseptic, or the same make of "boric-acid-plaster." Its mode of use and report of cases, will be found in the writer's work, p. 491. Even since the issue of the last edition, 1887, we have had reports from almost every case of its success in relieving deafness, assisting the perforation in closing, the plaster being retained for months, and in one case two years, with but little irritation.

Dr. C. M. Thomas, of this City, informs me that he has found the "oil-silk," such as is employed in antiseptic dressing, a very successful artificial membrane, looking and acting like the natural one. He cuts them the size required, leaving a small opening in the center. In some two cases he has found the hearing of the patient much improved even after their removal. Dr. C. S. Turnbull, my son, also of this City, employs with success, a pledget of antiseptic wool placed near to, but external to, the annulus tympanicus.

MEDICAL PROGRESS.

TRANSPLANTATION OF MUCOUS GRAFTS.—At the meeting of the XVII Congress of German Surgeons WÖLFLE, of Gratz, read a paper on this subject. He restores the continuity of the mucous membranes after excision of neoplasms or cicatrices by transplanting strips of mucous membranes to the uncovered places. The grafts were

¹ Clinical Manual of Diseases of the Ear, 2d ed., 1887, p. 489. J. B. Lippincott & Co., Philadelphia.

at first taken from the uterus or rectum of persons suffering from prolapse, or from the cervix of amputated uteri. Later he used the mucous membrane of animals (the stomach of the frog, œsophagus of rabbits and pigeons, vesical mucous membrane of rabbits, etc.), though his experiments in this direction are not completed. The mucous membrane was excised by the method given by Thiersch for epidermal grafts, or simply separated from the muscular layer of the viscera. He found that mucous membrane adheres as firmly as the epidermis. The permanence of transplanted mucous grafts was clearly demonstrated in a case of urethral stricture in which the continuity of the canal was determined at the autopsy, six months after the transplantation. Three cases of urethral stricture treated by this method are reported. The mucous grafts were taken from the prolapsed uteri of two females. The urethral cicatrix was completely excised, and the granulating surface covered with mucous membrane after Thiersch's method. No suture was required, but the surface was protected by a strip of iodoform smeared on its inner side with vaseline. The dressing was removed in from three to four days when a grayish sticky mass was found beneath. In three more days the granulating surface appeared as if covered with a film of mucus, and at the lapse of an equal period, the granulation tissue was seen to be replaced by a smooth glistening layer of perfectly formed mucous membrane. Equally successful results were obtained in blepharoplasty and rhinoplasty, the mucous membrane being taken from the prolapsed rectum of a child and from an amputated cervix uteri. In a case of rhinoplasty of the cheek the author successfully employed mucous membrane from the œsophagus and stomach of a rabbit.

In the discussion of the paper Prof. Thiersch stated that Wölfler's method was an important advance in surgical technique. He took exception, however, to the statement that implanted tissues assumed the character of the structures in which they were implanted, and cited his case of a man who, after transplantation of a skin flap from the cheek to the soft palate, found it necessary to shave the inside of his mouth on account of the growth of hair over the transplanted area.—*Berlin. klin. Wochenschr.*, No. 17, 1888.

DEAFNESS AS THE RESULT OF SYPHILIS.—At the close of a paper on this subject, DR. LAWRENCE TURNBULL draws the following conclusions:

First. That syphilitic diseases of the ear are less numerous in the United States than in Great Britain or Europe, and that it is not so frequently a cause of deaf mutism.

Second. In almost all constitutional syphilitic diseases of the ear in children and young persons

it is associated with some affections of the eyes, throat and nose. The deafness which often follows the improvement in the eyes is sometimes profound.

Third. Persons who have suffered from constitutional syphilis, especially young persons and children, have great impairment of conduction of sounds through the bones of the head. Even in adults with constitutional syphilis the tuning-fork in some instances cannot be heard on the bones of the head or face.

Fourth. In a few cases the first indication of a syphilitic diseased ear is a primary ulcer in the throat, naso-pharyngeal space, or in the auditory canal, or near the membrana tympani.

Fifth. Purulent otitis media, or otitis media serosa syphilitica, may occur in utero, or in very young infants, while in young persons and adults we may have congestion of the tympanic mucous membrane from the same cause, anchylosis of the bones of the ear, with bands of adhesion in the middle ear, by extension from the throat to the Eustachian tubes.

Sixth. Syphilitic disease may affect the most vital part of the internal ear, labyrinth, semi-circular canals and cochlea, with hyperæmia, marked thickening and dryness of the membranes of the round and oval windows and vessels which supply the internal ear. There is also disease of syphilitic nature in the auditory nerve, also the brain itself, in the formation of disseminated small nodules within the nerve centres. This form of disease of the ear is most successfully treated by the combined use of pilocarpin and mercury.¹ Another valuable preparation in obscure syphilitic cases is the following:

R Hydr. bichlor. gr. $\frac{1}{3}$
 Acid. arsen. gr. $\frac{1}{4}$
 Ferri pyrophosphat. gr. vj
 Divide in pil. No. xxiv. S.—One three times a day.

Care must be exercised in the use of powerful drugs, as there have been cases of jaborandi and pilocarpin poisoning. Two cases have been reported of poisoning: one from two drachms of the fluid extract of jaborandi (which required no antidote), and the other from swallowing a considerable dose of the fluid solution of pilocarpin used for stimulating the hair, instead of a solution of quinine. In both cases the symptoms were profuse perspiration and salivation, dimness of sight, prostration, a sensation of cold tremor and extreme general debility. The treatment of the pilocarpin case was with atropine, which is the antidote.—*Phil. Med. Times*, Sept. 1, 1888.

ASPIRATION IN SUPPURATIVE PERICARDITIS.—DR. EDWIN T. DOUBLEDAY reports a case treated by aspiration, and calls special attention: *First*,

¹ See p. 496, Author's "Manual of Diseases of Ear," for full account of cases.

to the fact that the patient never had any symptoms either of rheumatism or nephritis. *Secondly*, that the pericarditis was probably idiopathic. *Thirdly*, to the almost entire absence of fever while the case was under observation. *Fourthly*, to the large amount of pus withdrawn at one time, 51 ozs. *Fifthly*, to the fact that over 17 pints of pus were withdrawn from the pericardium in thirty-four days' time. As showing the effort that nature makes to cure these cases, I may cite one mentioned by Wyss, in which there was a pyopericarditis followed by the formation of a fistula lasting for years. The patient finally died of an attack of acute pericarditis.

I believe that in cases of pericarditis where there is a distant and muffled heart-sound, with a weak and rapid pulse and dyspnoea, an exploratory puncture with a hypodermic needle should be performed; that, if pus is present, the pericardium should be thoroughly aspirated; and that if, after two aspirations, the pus reaccumulates, an operation should be performed to establish drainage, and the cavity be washed out, if this be deemed expedient. Of course, in aspirating, the physician must take the risk of converting a serous into a purulent inflammation, as sometimes takes place in cases of pleurisy, even when the best antiseptic precautions are taken.

In cases in which drainage or washing out of the pericardium is employed, I think it would be well to prevent the pressure of the air upon the heart, as in fourteen cases of pneumopericardium, ten died from either sudden heart failure or asphyxia: This might easily be done by the use of a rubber bulb, with a valve opening outward, on the end of the drainage-tube, or by keeping an aspirator attached to the end of the tube and by occasionally turning the ratchet, so as to keep up a slight vacuum.—*N. Y. Med. Journal*, September 1, 1888.

THE PROPER TIME FOR THE ADMINISTRATION OF ACIDS, ALKALIES, ETC. — Alkalies should be given before food. Iodine and iodides should be given on an empty stomach, when they rapidly diffuse into the blood. If given during digestion, the acids and starch alter and weaken their action. Acids, as a rule, should be given between the digestive acts, because the mucous membrane of the stomach is in a favorable condition for the diffusion of the acid into the blood. Acids may be given before food when prescribed to check the excessive formation of the acids of the gastric juice. By giving it before meals, you check the osmosis stomach-ward of the acid-forming materials. Irritating and dangerous drugs should be given directly after food, such as the salts of arsenic, copper, zinc, and iron, except where local conditions require their administration in small doses before food. Oxide and nitrate of silver should be given after the process of digestion has

ended; if given during food, chemical reactions destroy or impair their special attributes, and defeat the object for which they were prescribed. Metallic salts, especially corrosive sublimate, also tannin and pure alcohol, impair the digestive power of the active principle of the gastric juice, so should appear in the stomach during its period of inactivity. Malt extracts, cod-liver oil, phosphates, etc., should be given with or directly after food, so that they enter the blood with the products of digestion.—*British Medical Journal; Dietetic Gazette*, July, 1888.

RECOVERY AFTER RUPTURE OF THE FALLOPIAN TUBE.—DR. DUCHAMP, of Lyons, records in the *Lyon Médicale* the case of a woman who had menstruated on April 30, and was suddenly attacked on June 17 with syncope, vomiting, and a feeling of something having given way in her abdomen. He was called in consultation on the following day, and found her in a condition of collapse. The pulse was almost imperceptible, the abdomen much distended, and extremely tender in the umbilical region. The patient was vomiting greenish matter. She stated that the pains had commenced just above the pubic region, and were accompanied for about half an hour by vesical tenesmus. Vaginal examination disclosed nothing definite. An intra-peritoneal pelvic hæmorrhage was suspected, and on the afternoon of the same day Duchamp performed laparotomy, after previous catheterization and thorough disinfection of the abdomen. A spray was not used. The abdominal cavity contained a quantity of fluid and clotted blood, of which 2.5 liters were evacuated, and a fœtus, about 2 cm. long, extracted. Old peritoneal adhesions were found and a perforation of the left tube. The tube and ovarian ligament was tied with carbolized silk, at two places close to the uterus, and the remaining part of the tube and the ovary excised. Three weeks after the operation the patient was discharged cured.

TREATMENT OF LEPRA.—BIDENKAP has seen but one case of leprosy benefited by Unna's ammonium sulpho-ichthyolicum out of many on which it was tried, and according to his observation the following is the best formula for local treatment. It is spread thick, and applied for thirty-six to forty-eight hours, every eight to fourteen days:

R	Olei Olivarum	20 pts.
	Resinæ Colophonii	20 "
	Ceræ flavæ	40 "

Melt over a water bath for half an hour, with constant stirring. Cool and add the following mixture:

R	Gummi resinæ ammoniaci	2 pts.
	Balsami Terebinth, venetæ	2 "
	Chrysarobini	12 "

—*Deutsche Med. Zeit.*, No. 100, 1887.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, SEPTEMBER 15, 1888.

THE PHYSICIAN AS A "NATURALIST."

That the physician should be a man of culture, of broad education, trained in mental discipline, and something more than a person whose business it is to visit sick people will some day be a truism—a truth appreciated by all. "The Physician as a 'Naturalist,'" was the subject of the Presidential Address of Dr. WILLIAM T. GAIRDNER, of Glasgow, at the recent annual meeting of the British Medical Association. The subject is a deep one, and was most admirably treated, as was to be expected from the learned author.

Students of the history of medicine will naturally recall the fact that the educated physician was first a naturalist, a man of science—as science was at that time. Dr. Gairdner's argument was that for a series of indeterminable ages, probably from the time of Hippocrates down to the Dark or Middle Ages, the tradition has constantly existed that the *healer* or physician of the highest class should also be, in a very real sense of the word, a *naturalist*, or perhaps a man of science (physical science being of course understood); that it is his prerogative to be trained and exercised after the best manner and according to the most thorough discipline of the science of his age; and that he should be regarded as being admirable and trustworthy as a healer or physician, chiefly in proportion to the confidence reposed in him as a *naturalist*—an humble, reverent, and exact follower and student of Nature. To

be a student and follower of nature, one must study nature herself; to be an *exact* follower, one must be trained in and have exact and scientific methods of thought and work. Turning again to the history of medicine, we find that the immortals of the profession—and of all the physical sciences—were naturalists in being students and exact followers of nature. Such was Hippocrates—at least to the extent of the light that he had—and whom Galen places in advance of Aristotle, and far above the Peripatetics and the Alexandrian Erasistratus, whose attitude towards Nature was inconsistent. We see Bacon opening his *Novum Organum* by ascribing to man the position of minister or servant and interpreter of nature—the idea being very likely borrowed from Hippocrates.

It is unnecessary to refer to the causes of the medical obscurantism of the Middle Ages. Superstition and "magike naturel" ran riot, and were not without effect on medicine. The physicians of this time were learned, but not scientific. Even at the beginning of the last century, when science began to awaken from its long sleep, the man of learning—of the type of Linacre—greatly overshadowed the man of science—such as Harvey—in the Royal College of Physicians of London; and Oxford and Cambridge, the portals, one may say, of the College, had no standing at all as scientific schools, and confined their teaching to a mediæval curriculum, as do practically many of our schools to-day. And, indeed, at one period of the evolution of medical education in Great Britain, the true physician, the minister, student and follower of Nature, says Dr. Gairdner, stood a very fair chance of being altogether suppressed and wiped out of existence. Before Linacre obtained the charter of the Royal College of Physicians from Henry VIII, in 1518, the practice of physic was chiefly engrossed by illiterate monks and empirics, and the licensing power was held by the bishops in their dioceses. Possibly the officious meddlesomeness of some churchmen with matters medical, and their readiness to endorse so many things that savor of empiricism and quackery, may be the result of a direct spiritual inheritance from the old English bishops.

So far as Great Britain is concerned, the departure from the time-honored medical course without the sciences had its origin in the Scottish Universities, under Cullen, Black and Hope, who

forced chemistry into the medical courses, and thus the way was prepared for the introduction of botany, natural philosophy and zoology. And why not? One must have but limited powers of observation, and still more limited powers of accurate thinking, that does not acknowledge that the proper study of these sciences is conducive to an accurate mode of reasoning and observation. As Graves said: "The charge of inexperience is not necessarily confined to the beginner; it applies equally to many an old practitioner, whose errors have grown and increased in strength during a long series of years, because, from defects in his original education, from the absence of a properly directed clinical instruction, he commenced practice without having previously acquired the habit or power of accurate observation." One wholly untrained in scientific methods of observation is about as likely to reason correctly in regard to a scientific matter, and about as like to stumble accidentally upon a scientific discovery, as he is to fall to the top of a church steeple. In order to see and observe one must know how to look, and look until he sees. Give an untrained person a piece of blende and a piece of quartz; he may see no difference. How is he to find out the difference? Make him look until he sees. The naturalist must first know how to see what he looks at. He must have the power of attention; he must be able to observe correctly; then he will be able to reason accurately. The true physician, as a naturalist, must possess the same powers; otherwise he will see and observe only a part of what he looks at, and reason inaccurately.

What is still wanting to bring about the professional idea of the physician's training, is a question discussed by Dr. Gairdner. He has considerable personal interest in this subject, because he has a son to educate. "The first thing to be learned in order to make all other lessons possible is, in my opinion, this—to deal very largely with things and not with mere words; to realize as much as you can all your instruction by making it your own through personal observation; to suffer nothing, if it can possibly be avoided, to lie in the mind as a dead weight of vocables, oppressing the memory and dwarfing the intellect; but to bring everything into the living light of fact and of Nature, and thereby at once to assure to yourself the truth and exactness

of your knowledge, while at the same time you are stamping it down upon the memory by the most sure and lasting of all technical methods." These words, delivered by Dr. Gairdner in an address more than twenty years ago, are a text for all that can be said on the subject of the best training for the physician, the scientist, the man. No one hope or fear that the physician educated on scientific lines can compete with the scientist, the *physicus*, on his own ground; but we can reasonably ask and hope that "he should be open to the influences, and should work in the spirit, and be subject to the corrections of the more exact sciences, in so far as they are applicable to the human body, whether in its sound or in its pathological condition."

And yet it must be acknowledged that there are very great difficulties in the way of training students of medicine on the lines indicated, the first and chief of which is the want of *early* training in physics and natural science. We see students entering medical colleges with their memories weighted down by chemical and physical laws and formulæ, and *knowing* no chemistry and no physics. To teach them these subjects one must undo years of bad teaching or no teaching, and begin with the youth of 20 what should have been begun with the boy five or eight years ago. Perhaps after we have learned on this side the Atlantic *how* to begin to teach the sciences, we will begin to *teach* them. That day will come, because it must come; and when it does, the day of the now orthodox curriculum will have set. The true physician is a Naturalist, and must be educated as such.

COMPETITION, SUPPLY AND DEMAND, AND MEDICAL EDUCATION.

Just as soon as any one remarks on the surplus of medical colleges and the excessive production of physicians by the colleges in this country, another person assumes an air of superior wisdom and importance and replies: "Competition is the life of trade;" or "Supply and demand regulate the whole matter."

Wholesome competition is the life of trade; unrestricted competition may be the death of it. There may be such a condition of overcrowding of the profession as will tend to the production or increase of quackery, and to lower the

moral tone of physicians. Wholesome competition is the life of *trade*; but competition does not make or increase the business of the physician. We may admit that incompetent physicians make work for those that are competent. Unwholesome competition tends only to make the morally loosely-inclined physician worse; but it does not make the conscientious physician better, or more careful, or more scientific.

Some weeks ago a writer in a medical journal in this country gravely asserted, and perhaps believed, that it was useless to continue to speak of the bad work of some of the medical colleges, and of the large annual output of graduates—that the whole matter was one of supply and demand. The law of supply and demand has nothing to do with the matter, either of the number of colleges or of the output of graduates, nor can it have, for the reason that the public does not purchase its supply of physicians from the manufacturers (the colleges). The production of wheat, and its price, are regulated by supply and demand. The American wheat-grower gathers his in, and may sell it in July or August; he may even contract to sell a certain amount of it before it is reaped; or he may wait for better prices, and hold it until next May, according to the price, *regulated by the surplus*. If the medical colleges could go into the market and offer a certain number of first-grade graduates at a certain price, and as many slightly damaged graduates at a lower price, for cash, as if they were wheat or shoes, with a certainty of profit if there were buyers, and a certainty of loss if they were not sold or had to be carried over for six or nine months, then demand would regulate supply and quality.

But such is not the case. The student entering a medical college does not stop to consider if there is a place to be filled by him two or three years hence. He pays his fees to the college, goes through the course, gets his diploma, and his connection with the college ceases; and in so far as his finding a position is concerned, the college takes no further interest in him. Beyond a kind of sentimental interest in the graduate, the college is regardless of what becomes of him, unless he can occasionally send a student to it.

There are circumstances when demand may vitiate supply. If there be excessive demand and limited supply, the manufacturer is induced by cupidity to put out an inferior article, because it

can be made quicker and at less cost. Again, with small demand and large supply (output), the manufacturer has to put out an inferior article so as to underbid competitors. In the case of the medical colleges for which there is no demand (no proper and good reason for existence), they must, in order to exist, underbid the other colleges, either by lower fees, or shorter courses and terms of study, or less rigid requirements for entrance and for graduation, or all of these. Now as concerns students that are attracted by such inducements as these, the profession does not want them in it, and the public are better off by having them out of the profession. They are the men, as a rule, that furnish the failures in the profession; they go into it with the idea that it is a trade, thinking that if it does not suit them they can go into some other business. Entering the profession with these notions, they never get to the point of seeing anything in it except drudgery and dollars; if they make enough dollars to supply the necessities of life, they add nothing to the profession, and lower it in the estimation of at least some of the public. They are an incubus to the profession while they stay in it, and a good riddance when they drop out.

When supply and demand regulate the schools and the graduates, we shall confidently expect the free-agency of shoes to regulate their size and price.

"THE PARLOR-GAME CURE."

Every one admits the value of recreation for the healthy and well man, whether that recreation take the form of sport, travel, or simply a change of occupation. Recreation by one that is not sick is in the nature of prevention. In the *Popular Science Monthly*, for August, REV. THOMAS HILL, Ex-President of Harvard, has an interesting article on "the Parlor-Game Cure," or in-door recreation, which may of course be as varied as recreation in the open air, and one is not always able, and does not always care to go out of doors for relaxation and amusement. One may rest his mind and body by reading. If his early training has been in the direction of the more solid subjects and severer studies, he may find as much recreation in reading a work in some department of science as another, with less training, can find in light literature. Obviously, the mind must be refreshed and invigorated on the same principle

as the stomach; and we may consider the voice and cravings of the mind, no less than those of the stomach, the voice of nature. The kind of recreation must be suited, as Dr. Hill suggests, to the peculiar tastes of the individual and to the character of the fatigue or anxiety that has worn upon him.

Parlor-games, says Dr. Hill, serve as means of cure for those sufferings that arise from mental causes; they do so by diverting the mind without overtaxing it. Liebig once made a remark that had a great deal of truth in it: When any article is received into the stomach, a contest begins at once between the gastric powers and the intruder. If they conquer, the article was food; if they are conquered, it was poison; if it was a drawn battle, the article was medicine. What is intended for recreation may be pursued so far that it ceases to be recreation, and becomes, so to speak, a poison. The sanitary use of anything in the way of recreation, is the use of that thing to the extent of diverting the mind from injurious thoughts, but not to the extent of making the thing itself injurious by reason of becoming too absorbing to the mind. Dr. Hill quotes the late Prof. Pierce as saying that no game, and no toy, ever became permanently popular unless it involved some deep and peculiar mathematical or mechanical principle, and Dr. Hill offers the partial explanation that the presence of this deeper principle, underlying the game, prevents it from being digestible by any except those of strong power. It is questionable, however, if the most expert players of popular games think much of the mathematical or mechanical principles involved. But this makes no difference in the value of games as amusements; one that would stop to demonstrate the mathematics of a billiard-shot would never become an expert at the game.

Against some of the games that may be used with advantage for their sanitary value there is a great deal of prejudice. Naturally, what is valuable as a medicinal agent is not suitable for an article of diet. Hyper-moralists—we know of no other name for them—tell us that certain games are immoral because played by immoral people for wrong purposes; that backgammon is conducive to gambling, as well as cards. In the same way it may be said that horseback riding is conducive to gambling on horse-races; and history tells us that a certain King of England died of

eating too plentifully of lampreys, which were considered a good article of food. The fact is, one must always draw the line at proper use, not going to abuse. But who shall absolutely deny to the invalid the recreation to be obtained from what, if its proper use be not overstepped to abuse, will divert and recreate and relax the mind and body as nothing else will. The invalid may wish to read, or he may not; he may wish to engage in conversation or he may not; he may wish to sit and think or he may wish to be so occupied that he will have no time nor opportunity for introspection. He finds invigoration in a horseback ride on an empty stomach; or he may prefer, as did the Frenchman, that the horse's stomach be empty. To a Morphy or a Steinitz a game of chess with an ordinary good player would be mental diversion without mental work, but the game of chess is too severely intellectual to afford relaxation to the mind of an ordinary player. The therapeutic value of a game, as Dr. Hill points out, depends upon its adaptation to the individual tastes and need of the person who takes it up; and must be such as to interest him and keep his attention, but not such as to absorb, excite and fatigue him. His native and acquired tastes, his age and habits of life, the state of his health, the causes of his fatigue, or illness—all these and other similar causes, will influence the effect that any particular game or amusement will have upon him; and in the exercise of a sound common sense, by himself and his friends, he will select and vary his amusements as carefully as he selects his various occupations, or chooses his diet.

EDITORIAL NOTES.

SPONTANEOUS RUPTURE OF THE VAGINA DURING LABOR.—DÜHRSEN describes, in a recent number of the *Berliner Klinische Wochenschrift*, a case in which the vagina was ruptured during labor by pelvic contractions and an abnormal presentation. The patient, aged 34, had given birth to twins twice, without difficulty, though she had a flat rickety pelvis. Footling presentation was diagnosed before the membranes broke, but the head could be felt to be easily movable, and the feet had evidently prolapsed below them. The vagina would probably have escaped damage had the membranes been ruptured at this time,

and the feet drawn down. The membranes ruptured spontaneously, and about half an hour later the pains suddenly ceased, and severe abdominal pain was felt. In the lower part of the abdomen was felt a globular swelling—the body of the child—and to its right was the uterus, strongly contracted. The child had been forced partly into the abdominal cavity; it was easily delivered by the feet, after which the placenta and a good deal of blood came away. A large rent was found at the insertion of the vagina into the left side of the cervix, and the laceration extended into the broad ligament. The cavity above the laceration, and the vagina, were packed with iodoform gauze. Several times during convalescence the temperature rose, but without symptoms of peritonitis, and the patient got up within a month.

HYPODERMATIC INJECTIONS THROUGH THE CLOTHES.—A writer in the *Texas Courier-Record of Medicine* advises the following method for preventing unnecessary pain and abscesses:

Draw the clothing tightly over the site selected for the introduction of the needle, and when the syringe is charged and ready for use, take hold of the needle with the thumb and forefinger of the right hand at a distance from its point that will gauge the depth to which you wish to insert it—then with a sudden, firm motion plunge the needle perpendicularly into the tissues until arrested by the thumb and finger. Then change hands, steady the instrument with the left hand and push the piston slowly and steadily down with the right. When the instrument is used in this way it very seldom gives any pain and, if the contents be deposited deep down in muscular tissue, it seldom produces even soreness of the part and never an abscess. Withdraw the needle as suddenly and quickly as it was inserted.

Before using the syringe in this way one should certainly be very careful that the clothes through which the needle is passed be absolutely clean—and of this it is almost impossible to be sure. Possibly the clothing may rob the puncture of its painful qualities, and the solution of all likelihood of causing abscess; but it is certainly most improbable.

IMPACTION OF THE TIP OF A BILLIARD CUE IN THE EYE is reported by DR. WM. ELLERY BRIGGS, in the *Sacramento Medical Times*, for September, 1888. The patient was first seen three days after

the injury, when the lids were very œdematous, the wound partly united, and the cornea hazy and slightly ulcerated; vision was defective, the eye somewhat prominent, and there was a purulent discharge from the wound. Probing the wound gave vent to some pus, but a foreign body could not be positively detected. After two days' treatment the condition of the eye was worse. The wound was then enlarged and dilated with a pair of dressing forceps. A foreign body was felt, which was removed by means of sharp-toothed forceps. It was the leather tip of a billiard cue, greatly swollen, and measuring about two-thirds of an inch in diameter and one-third in thickness. The eye then began to improve under atropine, iodoform, sublimate solution, etc. A leucoma covers a large part of the cornea.

CENTRALIZATION OF MEDICO-SANITARY SERVICE was discussed at the recent meeting of Swiss practitioners at Lusanne, in May. It was unanimously resolved that "it is highly necessary at least to establish official relations between the medical corporation and the Federal Council. Drs. De Cérenville and Souderegger sketched the proposal as follows: 1. The creation of a permanent federal Sanitary Commission, of a permanent council, which is to be consulted by the federal authorities in regard to every important sanitary measure. 2. The appointment of a permanent federal secretary for sanitary affairs, who is to be a medical man selected by the Medical Corporation. His office would be a central bureau for all kinds of information relating to public hygiene, sanitary and professional questions, Swiss and foreign statistics; and would deal with food supplies, epidemics, secret remedies, etc.

HYDATIDS OF THE BRAIN.—DR. DAVIES THOMAS, of Adelaide, read an analysis of 97 cases of so-called hydatids of the brain before the Intercolonial Congress of 1887. The *tænia echinococcus* and *tænia solium* are found in the human brain in the cystic condition. When dogs are admitted freely to dwellings and to sources of drinking water the *echinococcus* will be more common. The *echinococcus* forms a much larger tumor in the brain than does the *cysticercus cellulosæ*. In other organs the *echinococcus* cyst has a fibrous capsule, but in the brain this seems to be wanting. The cyst is more commonly in one or the other of the hemispheres of the brain, and but rarely in

the cerebellum. The only symptoms that seem to be common to the larger number of cases are headache, blindness, and convulsions.

PHOTOGRAPHING A NUISANCE.—One of the members of the New York Health Department has secured the conviction of the owner of a smoking factory chimney by photographing the top of the chimney in various stages of smoking. A detective has recently secured the conviction of a violator of the Sunday Liquor Law by making an instantaneous photograph of the inside of the saloon, with a group composed of the saloon-keeper and several more or less prominent citizens. This is a new field of usefulness for the camera, the testimony of which may be relied upon always. Possibly the portable camera may yet be a part of the outfit of the sanitary inspector.

GLASGOW POLICE AND AMBULANCE WORK.—The Glasgow Police Force is being instructed in ambulance and emergency work on an extensive scale. Dr. Kennedy Dalziel gives lectures and practical instruction to a certain number of men from all divisions four days in each week. Examinations will be held, and the successful men will receive certificates of proficiency, and will be entitled to wear the red St. Andrew's cross on the right arm to indicate that they are competent to treat injured persons.

A MINISTER OF PUBLIC HEALTH.—At the recent annual meeting of the British Medical Association MR. BRINDLEY JAMES raised an important medical and political question as to the need for a Minister of Public Health. Sanitarians will probably agree that there should be a "Department of Public Health" in every government. Public health is no longer a local matter, but a national, affecting the whole people. Local sanitation would not be affected by a central authority, but could be more efficiently carried on.

LAKE COUNTY, ILLINOIS, MEDICAL SOCIETY.—On September 6 a number of practitioners of Lake County met at Waukegan and organized a County Medical Society. The following were elected officers: President, Dr. L. H. Tombaugh, Milburn; Vice-President, Dr. Wm. M. Sweetland, Highland Park; Secretary, Dr. A. C. Haven, Lake Forest; Treasurer, Dr. J. M. G. Carter, Waukegan.

TRANSACTIONS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS.—We have reliable information that the last proof sheets of the fifth and last volume of the Transactions have been read and returned to the printer; which justifies the expectation that the whole work will be complete and ready for distribution before the end of the present month.

A CORRESPONDENT in Ohio sends the following interesting information: "The Northwestern Ohio Medical College at Toledo, Ohio, has reduced its fees to twenty-five dollars. The only thing now lacking is a good corps of didactic lecturers for its students who are not required to furnish evidence that they can either read or write."

THE SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION did *not* meet, as heretofore published, on the 11th, 12th and 13th of September in Birmingham, Alabama; but the meeting has been postponed till the *first Tuesday in December* next, in consequence of the present quarantine against yellow fever.

MINISTER VON GOSSLER, it is said, has announced that he will secure the coöperation of the German Government in suppressing all advertisements of secret remedies in Germany.

DR. JOHANN DLAUHY, the veteran hygienist of the Vienna School, died on July 31, in his eighty-second year.

SOCIETY PROCEEDINGS.

Obstetrical Society of Philadelphia.

Stated Meeting Friday, June 8, 1888.

DR. DACOSTA IN THE CHAIR.

DR. C. B. PENROSE reported

TWO CASES OF EXTRA-UTERINE PREGNANCY;
LAPAROTOMY; RECOVERY.

M. C., æt. 32, had had four children, the last seven years ago, and two miscarriages, the last eleven years ago. She was treated for syphilis and uterine retroversion in 1883. She applied for treatment again on February 6, 1888. She had been bleeding profusely from the vagina for thirteen days, had suffered with continuous sharp pain in the left side for the same length of time. The pain and bleeding had started suddenly after

heavy lifting. There were no signs of pregnancy. Vaginal examination revealed a small retroverted uterus, and a tender, cystic mass about the size of a duck's egg lying to the left of the fundus. Three days later the mass was again examined and found to have increased to the size of a large orange. Laparotomy was performed Feb. 10, 1888.

The left tube was found distended at the outer half by a cyst the size of an orange. About three ounces of recent blood-clot was found in Douglas' pouch. The cyst was very friable and easily ruptured. During the removal a considerable quantity of old blood-clot escaped into the peritoneal cavity.

The left ovary was independent of the cyst in the left tube. The right ovary was cystic, and was also removed along with the right tube.

The convalescence of this woman was uneventful. She has menstruated naturally since the operation. Three months after the operation her breasts became enlarged and painful, and she was able to squeeze milk from them. This secretion of milk lasted for two weeks until stopped by belladonna ointment. These mammary symptoms were the only signs of pregnancy exhibited, before or after the operation, and I wish to ask the members of the Society whether it is not an unusual occurrence for this secretion of milk to take place so long after the removal of the product of conception?

Case 2.—E. B., æt. 28, has had four children, the last one a year ago. She had not menstruated since her last labor until two months before she presented herself for treatment. She then began to bleed profusely, and to suffer with great pain in the left side. For the last few weeks the bleeding had been accompanied by the discharge of shreds from the vagina. Vaginal examination revealed a large cystic mass to the right of the uterus.

Laparotomy was performed May 22, 1888. To the right and posterior to the uterus was a blood cyst about the size of an orange. The cyst was firmly adherent to the posterior surface of the uterus, and to the right ovary and tube, and the right tube opened into the cyst. As you will see from the specimen, this cannot be called a tubal pregnancy, as the first case, where a tube is distended by a cyst containing the product of conception. In the second case the tube opens into the cyst. In each case there was disease of the opposite tube and ovary, the ovary being in each instance as large as a good sized egg. The second patient is now out of bed.

DR. M. O'HARA: Dr. Penrose asks with reference to the presence of milk in the first case. I have seen one case in which milk never appeared. The mother was delivered at full term, and the child died. Dr. O'Hara does not think belladonna has any effect in arresting the secretion of milk.

DR. WM. GOODELL said that anything producing irritation of the genito-urinary organs may cause the appearance of milk in the breasts. The presence of fibroid tumor may even do so.

DR. JOSEPH HOFFMAN reported a case of

PERITYPHLITIC ABSCESS ORIGINATING IN
APPENDICITIS,

exhibiting the specimens.

The patient, Mrs. B., married, with three children. When first seen she had a pulse of 128 and a correspondingly high temperature, and was unable to stir in bed without extreme pain. Careful questioning elicited the information only that eight days previous she had slipped from a chair, causing severe pain thereby in the right iliac region. This continued up to the time at which I was called in, when she was compelled to take her bed.

The duration of her trouble, according to her own statement, was limited to a little more than a week, though in this connection she mentioned the occurrence, previous to menstruation, of an ill-smelling vaginal discharge. Examination *per vaginam* discovered the presence of a tumor to the right alongside the uterus, the touch of which gave her much pain. The rectum was empty, she having had a dysenteric attack the previous day. External examination was so painful that I did not attempt it. The pain in her back and right leg was intense. I decided that operation was necessary and called in Dr. Joseph Price for consultation, but, examining under ether, was somewhat uncertain as to the condition.

Operation being decided upon, an opening was made in the median line and an exploration made. The cæcal portion of the intestine was found matted down, and was freed after much difficulty. The appendix was almost completely buried in pelvic tissue, and the temptation was great to tie it off piece by piece, though it was afterward enucleated by persistent effort. The cæcal portion of the bowel was almost gangrenous in spots and nearly ulcerated through.

Surrounding this portion was a quantity of stinking pus, about 2 ozs. The pelvis was carefully washed out, no antiseptic being used, and a drainage-tube introduced into the cul-de-sac, and a rubber tube led from the fossa, through the incision, which was closed by seven deep and superficial sutures. Nothing was done with the bowel save to cleanse it. The bowels were at first moved by enemata, and after a large quantity of scybala was discharged, calomel in $\frac{1}{6}$ gr. was given to clean the tongue and relieve bilious vomiting.

The patient made an uninterrupted recovery, all the stitches being removed, as well as the tubes, by about the tenth day. The patient now, at the twenty-fourth day, is sitting up, entirely free from pain.

A curious feature of the case is that after re-

moval of the offending appendix, the patient in three days remarked she had never been so free from pain for two years, then going on to give exact history of her trouble, all of which pointed to perityphlitis. Her pain had become so much a part of her that she did not seem to recognize it as foreign.

The points principally to which attention may be called are the closing of the incision, and the location of the same. Although central, drainage was perfect, and though sutured, it promptly healed, showing, I think, that dogma, both as to location and to allowing the incision to remain open, is not wise, as in this case the central incision enabled us to remove at the same time an ovarian hæmatoma, otherwise out of reach, and as drainage was perfectly obtained. These points for such operation are worthy of special consideration.

As to some points in the diagnosis, I shall not refer, leaving them to Dr. Price, who so kindly worked with me, I would only venture the opinion that here, as in all other pelvic surgical diseases, absolute diagnosis is very often impossible, depending, as it does, so much on an emesis which, as in this case, is little to be relied upon.

DR. CHAS. B. PENROSE: I would ask whether or not the pus was encysted around the cæcum, or free in the peritoneal cavity.

DR. HOFFMAN said the pus became evident only on raising the cæcum.

DR. PENROSE said the cases in which it is proper to make the incision over the cæcum are those in which there is an encysted abscess around the cæcum or the appendix. If there is free pus in the peritoneal cavity, a median incision would probably be better.

DR. GOODELL said that he on several occasions had been obliged to sever the appendix from its attachment, in operations for ovarian tumors, and the operation has seemed to have no effect. It seems to be a useless appendage. He did not know that modern research had thrown any light upon its use. In removing the appendix, he simply ligated it with silk and cut it off, carefully squeezing the end so that no fecal matter should remain.

DR. JOS. PRICE: A few years ago ovariologists regarded the appendix as sacred, as something that should never be touched. The case reported is one of great interest. The woman had complained for two years, her trouble evidently beginning in an appendicitis. The cæcum was so much thickened and so low down in the pelvis, as to suggest tubal disease. She however had good history and several healthy children, the youngest two years of age. The presence of the tortuous body on the right side determined the choice of the median incision. On opening the abdomen, the small hæmatoma was first removed. Afterwards the cæcum was dealt with. The course of the

case was all that could be desired. Dr. T. G. Morton teaches lateral incision and non-closure. As to the first, circumstances should influence the choice. As to the second, he did not believe in it at all. We are too far advanced in surgery for such procedure.

DR. J. V. KELLEY said that the general practitioner sees more cases of perityphlitis than the specialist, and he was disappointed in not hearing more about the history of the present case. He was also surprised that this case occurred in a woman, the disease being much more common in men. The existence of pain for a year or two would be against the existence of perityphlitic abscess. Over that time perityphlitic abscess is an acute disorder and runs an acute course.

DR. J. PRICE does not believe the view that perityphlitis is necessarily acute. He knew of a case of Dr. T. G. Morton, in which the operation for the trouble was repeated at the end of a year, and the appendix removed. Here the trouble was recurrent, gradually growing worse, and necessitating the second operation.

DR. M. O'HARA cited in substantiation of Dr. Price's views, the case of his own child, in which inside of eleven months there were two or three attacks. For four or five months he was in perfect health, although the condition (appendicitis) existed. Another attack followed, and death from septic peritonitis resulted.

DR. M. PRICE believed that the peritoneum can accommodate large quantities of pus for a time, just as abscess in other parts of the body can be tolerated.

DR. WILLIAM GOODELL thought that perityphlitis, like any other form of inflammation, may exist for years. He thought Dr. Kelley had narrowed the question down too far.

DR. HOFFMAN held it a mistake to believe inflammation cannot be present in these cases without the presence of a well-defined tumor. It is easy to make a diagnosis after operation, as is too often done. Pages could have been written after this operation on the diagnosis of perityphlitis, but *before* operation it was impossible, because there was no history. There was nothing but the inflammation of the appendix to cause the symptoms of which she complained.

DR. J. V. KELLEY thought no one would diagnose perityphlitic abscess without the presence of a tumor. The pericæcal tumors undergo resolution spontaneously, and abscesses do not form.

DR. J. B. DEEVER drew a distinction between appendicitis and perityphlitis, and believed very few cases of inflammation about the appendix undergo resolution.

DR. G. M. SHOEMAKER cited a case which he thought proved a termination by resolution in one such case.

DR. WILLIAM GOODELL presented a specimen of

OVIDUCTS AND OVARIES DISEASED BY GONORRHOEAL INFECTION.

The ovaries were enlarged by cystic and interstitial degeneration. The meso-salpinx was wholly absorbed, the fimbriated extremities of the oviducts were enlarged into a bunch of cysts, and the adhesions to the broad ligament were firm.

History as to the infection was a clear one. The husband had the gleet, and directly after marriage the wife's health began to fall from pain and reflex neuroses of a high grade. By vaginal examination, the concurrent implication of oviducts and ovaries was very manifest, as both organs were readily differentiated. The patient did well.

DR. GOODELL also exhibited a

SOLID OVARIAN TUMOR OF SUSPECTED MALIGNANCY.

The girl from whom he removed it was only 16 years old. It had grown very rapidly since it was first discovered a year and a half ago. It weighed 6 pounds, and for its removal needed an incision of nearly twelve inches. The pedicle was a very broad one. Some ascitic fluid was present. This patient was also doing well.

DR. GOODELL also exhibited a

FIBROID UTERUS WEIGHING 18 POUNDS.

A rapid accumulation of a large amount of ascitic fluid rendered the operation imperative. The patient had, on account of pressure upon the diaphragm, to be anesthetized in the sitting posture, and it was only after removal of the fluid that she could be safely placed in the recumbent posture. The incision needed for the removal of the tumor was a very long one. The pedicle was treated extra-peritoneally, by Kœber's wire clamp. Thus far all the symptoms are favorable, but as only forty-eight hours had elapsed since the operation, the patient was not yet out of danger.

DR. PRICE was glad to hear Dr. Goodell say operation is the only treatment for such cases. He never operates simply for relief of nervous symptoms, but wants actual disease.

DR. C. B. PENROSE exhibited specimens removed from a patient who had been treated several months, in 1884, for

CHRONIC CELLULITIS,

by the usual applications. She was married, and had two children, the last five years ago. In 1886 she returned for treatment. Diagnosis, cyst of left ovary and tube. She was again treated by the common applications. In 1888, one week ago, she returned for treatment, and pyosalpinx was diagnosed. The tubes and ovaries were found down in the hollow of the sacrum. The left ovary contained one drachm of purulent material.

DR. PARVIN regards the extract of hæmatoxylin the best astringent for chronic diarrhœa in children.

FOREIGN CORRESPONDENCE.

THE SALZKAMMERGUT AS A HEALTH RESORT.

St. Wolfgang—Ischl—Gmunden—St. Gilgen—Altersee—Unterach—Salzburg—Linz.

It is known to most medical men that the *Nach-Kur*, or After-Cure, is quite as important in the thorough treatment of such cases as find Carlsbad beneficial, as is the immediate drinking of the water. So as the time draws near which makes a change desirable for the patient, the question becomes an all-engrossing one, "Where shall I go to have quiet, good air, good food, congenial environment, and the services of a skilled physician?" These inquiries naturally associate themselves with considerations of cost of transit, and of ways and means generally. A patient whose system is experiencing the effects of the Carlsbad Cure has neither the physical strength nor the desire for long journeying. It is imperative also that the spot selected for convalescence should be as excellent as possible in all of the natural embellishments that round out an ideal summer home, and that it should not lack in the human devices that are necessary to the building up of physical strength.

For the purpose of aiding physicians in an intelligent differentiating, as well as to aid them in giving practical hints to such as are coming to Carlsbad, I propose to take up the discussion of some of the leading quarters that are desirable for invalids, embracing in this, a consideration of locality, of railway transit, cost, hotels, etc. This seems desirable, because during two seasons in which I have been in Carlsbad, out of the very many Americans whose acquaintance I had made, the question of the *nach-kur* seemed always to be a perplexing and a troublesome one. Beginning with the Salzkammergut, I shall cover the following resorts: Linz, Gmunden, Lambach, Ischl, Altersee, St. Wolfgang See, St. Gilgen and Salzburg.

From Carlsbad to Salzburg there is a direct train, leaving at about 8:30 o'clock in the morning, and making the trip in about fourteen hours without change of cars. Ischl is a drive—and a beautiful one—of between two and three hours from here. Altersee, St. Wolfgang, and St. Gilgen are short and lovely excursions, by carriage, from Ischl. The price of a ticket (second class) to Salzburg is 20 florins 62 kreuzers.

My family and I, who had determined on St. Wolfgang, and were desirous of making the journey as easily as possible, went first to Budweis. Leaving Carlsbad in the 8:30 morning train, arriving at 3:30 P.M. Tickets, second class, 11 fl. 82 kr. Here we stayed over night at the Silberne Glöcke Hotel. We took the accommodation train the next morning at 6:30 (this being the only

train that one can make use of unless he wait for the fast express, which does not leave till the afternoon), and arrived at Linz at 11:30 A.M. The tickets from Budweis to Linz cost only 2 fl. each. At noon of the same day we took the Vienna express from Linz and arrived at Ischl, after a rarely beautiful ride, of mountain, valley, and lake, at three in the afternoon, the tickets costing between 3 and 4 fl. We then took a carriage—which for three adults and two children cost 7 fl.—and drove in a little over two hours to St. Wolfgang. This made an easy and enjoyable ride. If one prefer, the journey can also be made *via* Munich, Rosenheim and Salzburg. From Carlsbad to Munich is a ride of twelve hours (Hotel Four Seasons), and from Munich to Salzburg *via* Rosenheim it is seven and one-half hours. One can go to Munich, then to Innsbruck and Salzburg. The road from Innsbruck is one of the most charming in Europe.

St. Wolfgang, on St. Wolfgang See.—This place is perhaps the loveliest in the Salzkammergut. It is a very old market town of 700 inhabitants. The lake is 549 m. above sea level, and is 12 km. long by 2 km. wide, and is 114 m. deep. It is hemmed in on all sides by mountains ranging from 1780 m. to 2000 m. in height. The water of the lake during the summer months has an average temperature of 17° R., and is pleasant for swimmers. The air is bracing without being cold, and the days are mild without being enervating. Take it for all in all, it is the most restful, healthful and altogether beautiful place that I have seen during a long sojourn abroad. There are two excellent hotels *Peterbräu* and *Weissen Ross*. The former is higher up, with a magnificent view; the other is directly at the water edge. At the Peterbräu rooms with a lake view, during the season, which begins in July, range in price from 2 fl. 25 kr.—that is, for a room with two beds. Rooms with balcony are more expensive. Rooms without the lake view are much cheaper. Board is 3½ fl. for each person, daily. It is perhaps cheaper to board *à la carte*, because one portion often is large enough for two, and at the end of each week ten per cent. is deducted from the entire amount of the week's bill. The situation of the Peterbräu is almost ideal. It would be difficult to conceive a more perfect picture of water, meadow and mountain. The walks are various, so that the Oertel treatment can be thoroughly observed. The food is simple, but well cooked and ample, while the milk is fresh and rich. For an After-Cure, nothing better could be chosen.

Ischl.—This fashionable and world-renowned summer resort is situated on the river Ischl where it empties into the Traun See. It is so surrounded by mountains that it seems to be quite shut off from the entire world. It is extremely rich in Alpine scenery, but lacking in the variety that

makes St. Wolfgang so attractive. It abounds in Hotels and Pensions, all of which are comparatively expensive. Hotel Elizabeth, Hotel Bauer, both elevated, near the Calvarier mountain; Hotel Post, Hotel Erzherzog Franz, Hotel Victoria and Hotel Austria, on the Esplanade; all of these first class. Bayrischer Hof, Stern and Krone, good houses, but of the second class. The Esplanade is rich with stores as attractive as those of Baden-Baden or of Carlsbad. There is a theatre, a Kurhaus, and a circulating library (mänhardt). Of baths there are Sool, Pine, Sulphur, Russian and Salt, also a swimming bath. There are 100 Milk and Grape-Cures. The kur tax for permanent guests is 8 fl.; for people of the middle classes, 6 fl., for women alone, 2 fl., children and servants, 1 fl. The music tax is 3 fl. The "Soolquellen" have been celebrated since 1828, and are very tonic and stimulating. Especially good for those who have taken a course of moor baths, and for those lacking in tone. On the Esplanade is a picture of Hygiea, bearing the inscription, "Man nennt als grösstes Glück auf Erden gesund zu sein—ich sage nein! ein gröss'res ist, gesund zu werden." The arrangement of the baths is perfect. Ischl has yearly between 6000 and 7000 guests, and upwards of 10,000 tourists. It is a place of much finery, tickling the fancies of those who revel in purple and fine linen. It is in every sense of the word fashionable, but I question much its entire fitness as a Carlsbad Nach-Kur. It is probably more widely known than any other place in the Salzkammergut.

Gmunden.—A lovely place. Grown of late to be as expensive and perhaps even more fashionable than Ischl, from which it is only a few moments removed, it also boasts of many hotels, of which I mention the Hotel Austria, on the lake; Hotel Bellevue, with an unbroken view and baths; Goldenes Schiff, on the steamboat landing; Hotel Lauthuber—all of these first-class. Second class: Goldenes Brunnen, Goldene Sonne, Hirsch. Kur-tax 4 fl. Music tax 2 fl. The esplanade runs for a mile along the border of the lake, affording magnificent views of the majestic mountains, impressive in their eternal silence, and of the Traun See. This lake is 12 klm. long, 4 klm. wide and from 28 to 191 kilm. deep, and is as romantically placed, in the lap of the gigantic peaks, green almost to their very tops, in shades that vary with the fickle rays of the sun, as any of the numerous bodies of water in this region. As at Baden-Baden, the patient can be quiet, entirely alone, with Nature only as a companion, or he can mingle with the throng in the ball-room, or satisfy his æsthetic though expensive desires among the shops that are made radiant to catch the guildens of the guests.

St. Gilgen is a quiet, restful, old-fashioned hamlet, on St. Wolfgang See, easily reached by boat from St. Wolfgang. It is cheap, unfashionable,

and charmingly situated. For those who demand *absolute* quiet, without any distraction whatever, it occurs to me that St. Gilgen would offer many inducements.

Altersee.—The Alter or Kammer See is the largest of the Austrian lakes, being 20 km. long and 2 to 3 km. wide. The little steamers run from Kammer to Unterach twice daily.

Unterach is a much sought after summer refuge, and is beautifully situated on one end of the lake. The hotels are the Post, Mittendörfer and Hofwirth, at any of which very reasonable arrangements can be made for a prolonged stay. The terms at the Hotel Altersee in Altersee are 2 florins a day for board, and for a *good* room with two beds between 2 and 3 florins. The country round about is somewhat less wild and more flat than at Wolfgang, but the walks are charming, and many people select Altersee in preference for a continued stay. Those who have been there for many summers continuously are loud in its praise.

Salzburg.—"Die Gegenden von Salzburg, Neapel, und Konstantinopel halteich," says Humboldt, "für die schönsten der Erde." Poets have sung its praises, travellers have written its beauties in letters of gold, and history has clothed it with an interest peculiarly its own. The natural splendor of its environs is that of Zermatt, but tempered with the refinement of a larger civilization and with its concomitant comforts. The air seems to be as invigorating as that of Saas in Grund, but not as rough and sharp. It is a Kur-ort—a Health Cure—of the very first rank. In natural beauty it has no rival. Its baths of all kinds, including the Moor, are of the highest order, and it combines everything that is necessary for mental rest, physical repair, æsthetic gratification and artistic ambition. It would be prolix to attempt a minute description, because Salzburg is known to most every one; it would be foolish to attempt word-painting, because even a Theophile Gautier would find himself handicapped in the attempt. It simply more than bears out all that has been written and said about it. The Hotel de l'Europe and Neblock are both as good as anything we have at home. Two people can have a comfortable room and board at either for from \$80 to \$90 a month, and I have no doubt that for a long stay much cheaper terms could be made. But there are rooms to be had everywhere for from 8 to 15 florins per week, and at the Mirabellgarten Kurhaus, or Zipfer Bierhalle, meals at all prices are always ready. Breakfast and supper (bread, eggs, tea, coffee, chocolate, etc.), can be had at Tomaselli, Koller, Oberkogler, Felber, or at many other coffee-houses. In this way two people could live for 5 or 6 florins a day. For patients making a Nach-Kur, or continuing here these baths, this *al fresco* life has great advantages—for fresh air and plenty of it is always prescribed. Libraries, museums and shops are in

abundance. The place is rich in reminiscences of Mozart, and the restlessness, the vagaries and the superstitions of the Middle Ages have left their finger-marks everywhere. I have never yet heard of a person who left Salzburg disappointed, or feeling that the actual had not more than equalled the prefigured.

Linz.—This town is best known as a bathing station for travellers from the north and east toward Ischl. It has direct connection with Vienna by boat (eight to nine hours) or by railway—by the latter also with Munich, Budweis, St. Valentin and Ischl. Its hotels are Erzherzog Carl, Goldenes Adler, Kanone and Goldene Löwe. It is prettily situated, but has no especial merit as a Kur-ort. This may also be said of Lambach.

Finally, I commend the Salz Kammergut to physicians who are sending their patients to European summer resorts, as being a complete realization of all that is most desirable. To add a suggestion would seem to spoil the general harmony. Nature has done its perfect work in an incomparable way, and man has added to it the comforts which modern civilization demands.

HORATIO R. BIGELOW, M.D.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Liparin—*Improvement of Watering-Places*—*Florence Nightingale*—*Epidemic Jaundice*—*The Lebel Rifle*—*Sir William Bowman*—*The Morgue in Paris*—*The Children's Jubilee Offering to go to the Hospital for Sick Children*—*Glass-blowers' Cramp*.

The new product known as liparin is said to be a good substitute for cod-liver oil. It is proposed to make liparin cheaply by the direct addition of pure oleic or erucic acid to olive oil. It is thought that cholesterin which is contained in cod-liver oil, is of importance, and that if vegetable oils be used in place of cod-liver oil they should be made to contain cholesterin. Others look upon cholesterin as a most undesirable substance to be present in cod-liver oil, or in any other substance used as a food or medicament, since it is the principal cause of gall-stones. Professor Mering, who introduces liparin to medical notice, says there can be no doubt that in the first half of the present century cod-liver oil was regarded as more efficacious than it is now supposed to be, and he attributes this to the fact that the article first used was the dark oil, which contained much more free acid; the steam-drawn oil now used being prepared as nearly as possible neutral. With regard to cholesterin, the same Professor thinks that it is a great mistake to credit this substance with any properties as a food. He remarks that the yolk of a hen's egg contains about as

much cholesterin as can be obtained from three ounces of the best cod-liver oil, namely about four English grains, and maintains his opinion that lipanin is an excellent substitute for cod-liver oil.

Last year the Speaker of the House of Commons made a few graphic remarks on the mineral waters of Great Britain and Ireland, which were duly reported at a meeting of physicians at Leamington. On that occasion it was pointed out that if it was desired to promote the prosperity of our English spas, there must be certain developments which many of them did not at the present possess. The invalid did not merely want water and baths. There must also be the means of recreation, for the invalid who when well amused was half cured. English medical men were reproached for neglecting the spas of their own country, but it must be remembered that they had to take a great variety of subjects into consideration. The bromo-iodine spa at Woodhall, in Lincolnshire, has only at present a local reputation, though Mr. Burney Yeo claims for it that as a health resort it will no doubt have a European or even a world-wide fame, and such is the case of others. And should any of them be recommended to a lady by her physician, he will as likely as not be at once asked whether Homburg or Weisbaden would not do as well. A young man in the Guards objected to Harrogate because he was afraid of meeting his tradesmen there, and in a like manner a married man refused to go to Bath because his mother-in-law had already been recommended to go there. Numerous mineral springs in England are known to chemists and are shown by analysis to be similar to those of Vichy and other Continental resorts, but hitherto it has not been deemed advisable to risk any capital in the view of making them fashionable health resorts, simply because the attraction of Continental travel and thorough change of scene and of climate are too great, and draw annually from Great Britain enormous sums of money.

Miss Florence Nightingale, the heroine of the Crimean war, is now a confirmed invalid. The long hours of standing during her hospital work affected her spine, and she has been for some years past an in-patient at St. Thomas' Hospital. She is now in her sixty-ninth year.

From Glasgow the medical officer of health reports a group of cases of what has been described as "epidemic jaundice." They were eleven in number and occurred in five families. Nearly all the patients were children, and there were two deaths. A woman, aged 36, was the first to have it. She died after two months illness. Her child, aged 14 months, was taken ill the day before its mother's death and is still jaundiced. In one family six of the children have been ill. All the cases have occurred in the same small district. The investigation of the present affected area is not yet complete, but the drainage is for the most part "sur-

face drainage," and the house drains and connections are very defective. The precise causation of outbreaks is not clear but in numerous cases it is thought by Dr. Russell to be distinctly associated with sanitary defects and nuisances, such as stagnant sewage, choked drains, and the like.

The new French instrument of destruction, the "Lebel rifle," is a wonderful weapon. Members of the Academy of Medicine wishing to diagnose the physical consequences of wounds inflicted by the bullets of the gun recently had experiments made on twenty corpses. The bodies were placed at the ordinary firing distances, from 200 yards up to a mile or so. The bullets whizzed through the bones and pierced them without fracturing them, as is done by the bullets of the "Gras rifle." The wounds, if they may be called so, which were inflicted were small in their punctures, and consequently very dangerous and difficult to heal. Injuries inflicted at short distances were so considerable that in the opinions of the surgeons they would be almost incurable.

A provisional committee has been formed to present Sir William Bowman with some public acknowledgement for his great services to ophthalmology and to physiological science. The testimonial is to take the form of a portrait of himself painted by an eminent artist. No limit is placed on the amount of individual subscriptions, but it is hoped that the sum collected will be sufficient to enable a good reproduction of the portrait to be distributed to subscribers of at least two guineas.

The books of the Paris morgue show a steady yearly increase of the number of dead bodies received. Four hundred corpses were brought in 1830. In 1870 the number had risen from 400 to 800. The numbers rose from 807, in 1880, to 920, in 1881, and from 879, in 1882, to the unprecedented figure of 944, in 1883—the result of wilful murder, accidental death, or suicide.

The Children's Jubilee Offering to the Queen, which has exceeded £6,000, has been presented with a diamond brooch to Her Majesty, on behalf of the children, by Princess Victoria, of Teck. The money will be appropriated towards the completion of the wing to the Hospital for Sick Children, Great Ormond street.

Attention has just been drawn to the fact that glass-blower's cramp is a professional deformity of the hand. It consists in pronounced flexion of the fingers, occurring chiefly at the second joint. In France it is called *main en crochet*, or *main fermée*. It attacks the majority of workmen and is most pronounced in the oldest. No remedy is proposed by Dr. Poncet, who has been giving great attention latterly to the subject.

G. O. M.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Diphtheria—Cocaine Solution Sprays in Bronchial Affections—Hot Water in Obstetrics—Electrolysis in the Treatment of Erectile Tumors—Advantages of Borax and Boric Acid—Pathology of Diabetes.

At a recent meeting of the Société Médicale des Hôpitaux, Dr. Gaucher made an important communication on the treatment of diphtheria. He stated that the false membranes being the source of infection, should be removed, their site being painted with a concentrated solution of carbolic acid and camphor, in alcohol, to which is added some olive or almond oil. The following is the formula of the solution he employs: Crystallized carbolic acid 10 grams, camphor 20 to 30 grams, alcohol 10 grams, the whole to be dissolved, and to this is added an equal quantity of oil. The strength may be varied according to the severity of the malady. The essential point of the treatment consists in the topical application of a caustic solution which is at the same time antiseptic, after the removal of the membranes. The latter is effected by vigorous rubbing with some cotton wool wound round a slender piece of wood, which has to be repeated morning and evening. Some of the members present observed that it was too difficult and painful an operation for the author to entertain any hope of its being adopted in practice.

Dr. Perron, of Bordeaux, made a communication to the same Society on the advantages of sprays of solutions of cocaine in various bronchial affections. Under the influence of a 2 per cent. solution of cocaine which is used in the form of a spray, the most violent fits of coughing are arrested in a few minutes. Phthisical subjects who are troubled with coughing and consequent insomnia at night, experience immediate and durable relief from this treatment. By this means opiates which are always more or less injurious after a time, are avoided. In acute bronchitis the action of cocaine is as advantageous. A notable modification takes place in the state of the pulmonary mucous membrane, and owing to the insensibility thus produced, the inflammation and the secretion are diminished. About ten or twelve inhalations, practiced by means of the spray producer placed near the mouth wide open, suffice to bring about prompt and satisfactory results.

In his thesis for the doctorate, Dr. H. Lorain, of Nancy, treated of hot water in obstetrics. The author explained that hot water at a temperature of 45° to 50° C. is an energetic stimulant of the smooth muscular fibre. It also has an action on the blood-vessels, manifested by an immediate and persistent contraction of the vessel, or by a momentary dilatation followed by contraction.

These two physiological facts explain the therapeutic effects so evident which these hot injections of 45° to 50° C. exercise on the uterine contraction. It is by their stimulating action on the uterine fibre that these injections constitute an oxytocic means so efficacious and so useful during labor. It is the double action exercised by the hot water on the fibre and the vessels which explains its efficacy as an agent of hæmostasis. Hot injections should be preferred as hæmostatic to cold injections, as cold water has an action less energetic on smooth fibre and, moreover, the vascular contraction due to cold might be followed by a reaction with paralytic dilatation, whence it may happen that the hæmorrhage, arrested momentarily, reappears with more intensity.

Dr. Redard lately read a paper at the Société de Chirurgie on the treatment of erectile tumors by means of electrolysis. The author accords to this treatment a superiority over the other means generally employed. He entered very fully into the mode of operation, and employs electrolysis only once in six or eight days. After the first application the tumor hardens; after the second, the morbid production presents important modifications. The apparatus he employs consists of a battery of continued currents, a galvanometer of intensity well graduated, needles in gold or in platinum, of half a millimetre in diameter and from eight to ten centimetres long. The operation may be performed by three ways of introducing the needles into the tumor: 1. By penetrating the morbid product with the positive and negative needle, at a short distance one from the other. 2. To introduce the positive needle alone into the tumor, the other pole of the battery fixed in the form of a plate on any part of the body. 3. To introduce the negative needle alone into the tumor. The current employed should be from 15 to 18 milliampères. In order to avoid all hæmorrhage, before withdrawing the needle or needles, the current should be reversed for a few seconds and brought to zero. The needle or needles should be removed only when no resistance is experienced. The author concludes his paper by the following propositions: 1. Electrolysis is the method of choice in the treatment of erectile and cirroid tumors. It succeeds wherever the other methods fail. 2. It affords protection against all accident of sloughing and of suppuration. 3. It acts with certainty and precision. The puncture with the positive needle alone should be recommended in the majority of cases.

In a paper to the Medical Society of Anvers Dr. Bedoin writes on the advantages of borax and boric acid. He states: 1. The borate of soda or borax, and particularly boric acid, possess incontestable antiseptic properties, the activity of which is not so small as is generally affirmed. Both are recommended for the preservation of alimentary substances, such as milk, butter, cheese,

eggs, butcher's meat. But owing to its almost absolute insipidity, boric acid should, for this purpose, be preferred to borax, the savor of which is disagreeable; both are absolutely innocuous. 2. Interiorly, the therapeutic employment of boric acid as an antiseptic has already given very encouraging results, which are of a nature to authorize its administration in the affections where, till now, carbolic acid was almost exclusively employed, for example, typhoid fever. 3. Exteriorly, the serious antiseptic properties of borax and particularly of boric acid, justify the generalization of their employment in surgery, notably in the practice of dressings after the method of Lister, also in certain affections of the urinary organs, of the eyes, ears, and of the skin.

At the Société de Biologie, Dr. Quinquand read a note for Drs. Artaud and Butte on the pathogeny of diabetes, in which the authors notice the organic alterations consecutive to neuritis of the vagus nerve. These alterations involve the greater part of the viscera: intestines, pancreas, stomach, liver, kidneys, etc. They are of the same nature which are observed in diabetes, and are accompanied by functional troubles which characterize this malady.

A. B.

DOMESTIC CORRESPONDENCE.

Physicians and Insurance Companies.

Dear Sir:—In view of the self-evident fact that all true life indemnity rests upon the accuracy and reliability of medical opinion and services, it would seem equally apparent that the profession is entitled to square dealing, at least from the great companies. Many of the latter in order to advance their interests have, of late, adopted a line of policy which violates the tenets of honorable dealing, and is unjust towards those whose assistance has proven in the past so valuable.

Solicitors for these companies are authorized to ignore the claims of established medical examiners, and boldly offer their patronage to any medical man who will bid for it by taking out a policy. It is natural, that those having acted as examiners—regularly appointed—should often be carrying all, and frequently more insurance upon their lives, than they feel able. Should this be true, it avails nothing that his services have stood between the company and heavy losses or the many good words dropped for the former during his relation as examiner, provided some other man can be induced to insure. To drop a man and transfer the patronage of the company to another for such a reason is worse than unjust—it is ungrateful.

Truly yours, x.

BOOK REVIEWS.

Early English Text Society. *THE ANATOMIE OF THE BODIE OF MAN.* By THOMAS VICARY, Searjeant of the Surgeons to Henry VIII, Queen Mary, and Queen Elizabeth; Master of the Barber-Surgeons' Company; and Chief Surgeon to St. Bartholomew's Hospital, London, 1548–62. The Edition of 1548, as reissued by the Surgeons of St. Bartholomew's in 1577. With a life of Vicary, Notes on Surgeons in England, Bartholomew's Hospital, and London, in Tudor Times, an appendix of documents, and Illustrations. Edited by Fredk. J. Furnivall, M.A., Hon. Dr. Phil., and Percy Furnivall, a student of St. Bartholomew's. Part I. London: N. Trubner & Co. 1888. 15 shillings.

This volume contains a portrait of Dr. Vicary, after Holbein, early plans of St. Bartholomew's Hospital (about 1560), Norden's map of London, 1593, map of Vicary's road from London to Maidstone and Boxley, and other illustrations. The "profitable Treatise of the Anatomie of Man's body, compyled by that excellent Chirurgion, M. Thomas Vicary, Esquire," occupies 86 pages. The appendix may possibly be considered the most interesting part, and covers 250 pages. It contains the grants to Vicary by Kings and Queens; extracts from City records as to Barts, Vicary, the Plague, London vagabonds, etc.; Vicary's will; Henry VIII's statutes relating to Surgeons; Supplement to the statutes; the Surgeons' compromise with the City as to serving on Quests; ten recipes by Henry VIII and his physicians. Poem, "What veins to bleed in," etc.; the 185 Freemen of the Barber-Surgeons' Company in 1537; the numbers of the other City Companies; ordinances of the Barber-Surgeons of London, 1529; ordinances of the Barber-Surgeons of York, 1592, and other matters.

As a contribution to the history of medicine this volume is of rare interest.

Early English Text Society. *A DIALOGUE AGAINST THE FEVER PESTILENCE.* By WILLIAM BULLEIN. From the Edition of 1578, collated with the earlier Editions of 1564 and 1573. Edited by MARK W. BULLEN and A. H. BULLEN. Part I.—The Text. London: N. Trubner & Co. 1888. 10 shillings.

This work was written just after the great Plague of 1563, and is edited by two namesakes of Dr. Bullein. This dialogue seemed to have dropped out of notice after 1596; in this year Nashe mentions it in his "Address to all Christian Readers," in which he writes: "Memorandum, I frame my whole Booke in the nature of a Dialogue, much like Bullein and his Doctor To-crub." This "To-crub" was anagrammatic for

Dr. Burcot, an expert in metals and minerals, and whose name appears in the State papers of the time. The editors are preparing some notes on the *Dialogue*, which, with a biographical and critical memoir of Dr. William Bullein, and copious extracts from his remaining works, will form a separate part. Lovers of the old and curious in medicine will find much in this *Dialogue* to interest them.

SECOND ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF OHIO, for the Year ending October 31, 1887. Pages 374. Columbus: 1888.

Among other reports this volume contains reports of health of towns, on water-supply and disposal of sewage, and on various diseases, and on the adulteration of food, drugs, and drinks. It contains also a number of papers on sanitary subjects, as "Effect of Occupation on the Health of Individuals," by Dr. John D. Jones, "Especially Sources of Danger to Life and Health," by Dr. Thomas C. Hoover, and "The Hygiene and Care of Children by their Teacher," by Katherine Kurt, M.D.

MISCELLANEOUS.

EXTRAORDINARY VITALITY IN A CHILD.—Dr. W. A. Thompson, of Amphyll, England, gives in the *British Medical Journal*, an account of most wonderful vitality in a young child:

On Tuesday, July 17, two children aged respectively $4\frac{1}{2}$ and 5 years, left their homes shortly after their dinner at 1 o'clock. They were seen during the afternoon playing together by the side of a pond, with shoes and socks off their feet, by a passing laborer, who shouted to them to leave the water, and it appears that the boys ran away frightened in different directions. The eldest boy arrived home some hours later on, and stated that he had lost his companion and knew nothing as to what had become of him. Search was made about the roads and paths where the children had been seen, but to no purpose. It was now getting dark, and the police being informed, a large party started off in search, some with lanterns and some with St. Bernard and retriever dogs. Rain fell nearly all that night, but the search was continued, night and day, for several days. It rained heavily frequently during this period.

All hope of finding the child was now abandoned. However, on the Sunday morning following (July 22) some young men and boys were having another look round the fields, when, at about 10 A.M., one of them thought he heard some groaning in a field of wheat near him, and, on going there, found the little boy sitting on the ground, not very far from the pathway. He was sitting upon his coat, with his little trousers drawn down over his feet, and crying out: "Mother, Mother! I am so hungry!"

How long he had been in that spot and in that condition of attire we cannot make out, and he is too young to give much explanation. When found he appeared to be in a semi-conscious state, and did not seem to know those around him; but after some hours he recognized his mother and brothers. With suitable treatment the child has completely recovered, without any subsequent illness which might be induced by starvation or exposure to wet and cold for the long period of five days and

nights, counting from the dinner-hour on Tuesday until 10 A.M. on the Sunday following.

During this time, as far as any one knows, the child had nothing to eat except the heads of growing wheat (which was in very poor condition at that time). He told me that he had eaten some, and we may presume he sucked water off the wheat and grass about him. Curiously enough the child had out with him a small tin box without any lid, and he states he tried to catch rain-water in it, but could not get any; the wheat being very high probably prevented him doing so, and also most likely kept him fairly dry. In appearance the child did not seem much the worse for his prolonged fast, and seemed as plump as any ordinary child; but the mother states that he was an unusually strong and fat boy.

Taking all things into consideration—the child's age, no proper food or drink for over 117 hours, the exposure to the cold and wet weather prevailing at the time, the misery and the loneliness it must have endured for so long a period—it seems somewhat remarkable that life was preserved.

GREAT GAIN.—Dr. John C. M'Vail says: "If the question be asked, Where is the proof that our preventive measures—our sanitation, vaccination, and isolation—have had the results we speak of, the answer is at hand. It is given by the Registrar-General in the language of figures. He points out that, according to the newest English life-table, the children born in England in any one year have now divided among them 'nearly two million years of life'—more than would have been the case thirty-five years ago. In England and Wales the annual mortality per million of population per annum has been as follows:

1861-65	1866-70	1871-75	1876-80	1881-85
22,595	22,436	21,975	20,817	19,310

Comparing the first period and the last, the difference is 3285 per million, and taking the population at 30,000,000, the total annual saving is about 100,000 lives. And if for every death there are twenty cases of sickness, then we have two million less cases of sickness in the first period. . . . You can count the cost of each case of sickness, of lost work, of doctors' bills, and so on, and also the monetary value of each of the 100,000 lives saved. And you can put all this as an income against the interest on the money spent in sanitary improvements, in water works, sewage works, vaccination grants, officials' salaries, etc., and even on this lowest ground—on this merely commercial basis—we find that cleanliness is next to godliness, resembles godliness itself in being 'great gain.'—*Sanitary Journal*, July 4, 1888.

DEMAND AND SUPPLY IN SNAKES.—Last year in Madras 1,492 persons were killed by snakes, while 255 snakes were killed, and no rewards were paid. In Bombay 1,206 persons died from snake-bite, while 266,921 snakes were destroyed, and Rs. 6,517 were paid as rewards for their destruction. The mystery is not explained by a further examination of the facts. In Bombay in 1885, 1,145 persons died from snake-bite, while the number in 1886 was 1,206, showing an increase of sixty-one victims, although 283,579 snakes had been killed in 1885. In Madras 1,487 persons died of snake-bite in 1885, and in 1886 the number was 1,492, showing an increase of only five deaths, while in 1885, 328 snakes were killed, and no rewards were paid. Again; in Bengal the number of deaths from snake-bite in 1885 was 10,112, whereas in 1886 it had been risen to 10,388, although 53,995 snakes had been killed in 1885, and only 31,204 in 1886. In the Punjab, where snake-killing has been energetically taken up, the victims numbered 686 in 1885 and 928 in 1886. Yet 47,576 snakes were killed in 1885, at a cost of Rs. 4,732, and 87,715 were destroyed in 1886, at a cost of Rs. 10,506.—*The Indian Medical Gazette*, May, 1888.

HEALTH IN MICHIGAN FOR AUGUST, 1888.—For the month of August, 1888, compared with the preceding

month, the reports indicate that dysentery, diarrhoea, cholera infantum, cholera morbus, remittent fever, typho-malarial fever and erysipelas, increased, and that measles decreased in prevalence. Compared with the preceding month the temperature in the month of August, 1888, was lower, the absolute humidity and the day and night ozone were less, and the relative humidity was the same.

Compared with the average for the month of August in the nine years, 1879-1887, intermittent fever, cholera morbus, whooping-cough, remittent fever, diphtheria, tonsillitis, cholera infantum, typho-malarial fever, influenza and diarrhoea, was less prevalent in August, 1888. There was no disease reported more usually prevalent in August, 1888.

For the month of August, 1888, compared with the average of corresponding months in the nine years 1879-1887, the temperature was lower, the absolute humidity was slightly less, the relative humidity was the same, and the day and night ozone were much less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of August, 1888, at 27 places, scarlet fever at 25 places, typhoid fever at 28 places, measles at 7 places.

Reports from all sources show diphtheria reported at 6 places more, scarlet fever at 8 places more, typhoid fever at 13 places more, and measles at 15 places less, in the month of August, 1888, than in the preceding month.

PHARMACEUTICAL MAPS.—We have decided to print Europe in several sectional maps, and without regard to any special order save that of having the material at hand to best serve our purpose. The coming sectional maps of Europe will be on a much larger scale than those heretofore given, and will therefore have even greater value in pharmaceutical, botanical and commercial interest than anything yet produced. We have been favored with the aid of some of the most eminent of scientists in Europe in the arrangement of the habitat of the plants, and congratulate our readers and friends on this pleasant feature of pharmaceutical fraternity which we shall duly acknowledge by giving suitable notice of their kindness when publishing the portions to which each have so generously contributed of their personal knowledge toward insuring a reliable pharmaceutical map of Europe.

Recently we have had a set of the three maps heretofore given (South America, Africa and Asia) reproduced on a scale suitable for college instruction. The first two maps are 7½ feet square, the map of Asia 7½ feet by 11 feet. Such maps cannot fail to be of great value to students at colleges of pharmacy and medicine, being specially adapted for lectures on *Materia Medica*.—*Pharmaceutical Record*, Sept. 1, 1888.

DISEASES OF WINE-TASTERS.—A German medical paper says: The diseases of wine-tasters were studied by Donnet, of Bordeaux, and Dr. C. Marandon, of Dijon. Wine-tasters are frequently suffering with disturbances similar to alcoholism, although the claret-tasters do not swallow the wine, but on the contrary, reject it, and even rinse their mouths afterward. In one case of Dr. Donnet's a man 32 years old used to taste every day thirty or forty samples of wine, occasionally liquors and rum, without ever swallowing any part of them. After two years he became very excitable, lost his appetite, did not sleep well, and suffered with disturbances of sensibility, pains in the breast, a feeling of weakness, difficulty in breathing. He improved after abandoning his profession, although a nervous debility still remained, as noticeable by the facility with which he was set in tears. Another statement made by Dr. Donnet is the great number of apoplexies in Bordeaux, where many persons drink one and a half litres of wine with each meal. This number exceeds the number of apoplexies in any city of the world. Dr. Marandon did not notice any symptoms of intoxication in Burgundy tasters, although some of them

would swallow the samples. He remarks that tea-tasters always swallow some tea, and this fact, he says, explains the nervous symptoms they are affected with.—*Mining and Scientific Press*.—*Sanitarian*, August, 1888.

RESIDENTIAL BUILDINGS FOR MEDICAL STUDENTS.—The medical staff of Guy's Hospital, with the consent and full assistance of the governors, have decided to build a residential college for the students. This will be erected on premises within the hospital precincts, on ground on which the first Nonconformist place of worship in London was situated. It is intended for the reception of sixty men, amongst which number will be included the resident staff of the hospital, the house surgeons, house physicians and others, who will be in telephonic communication with the hospital buildings. Every convenience will be provided and amongst other things a gymnasium will be included, for the use of the residents; this is as it should be. The building is calculated to cost £20,000, the whole of which has been already subscribed.—*Lancet*, July 28, 1888.

RE-IMPLANTATION OF BONE.—After his Address on the Surgery of the Brain at the recent meeting of the British Medical Association, Dr. Macewen gave a demonstration of cases so remarkable that it alone would suffice to render the Glasgow meeting memorable in the annals of surgery. Many of the patients whose cases have been described in the address were present, but the many eminent surgeons who attended were greatly interested also in the examples of reimplantation of bone; the head cases afforded many instances, but the most remarkable was a boy, in whom the whole shaft of the humerus had been reformed from grafts, forming a useful limb. The audience was large, and Dr. Macewen was loudly applauded and received numerous congratulations on his brilliant results.—*British Medical Journal*, Aug. 11, 1888.

BICARBONATE OF SODIUM AS A MILK PRESERVATIVE?—The conseil d'hygiène of the Department of the Seine have taken a decided stand against the use of bicarbonate of sodium for the preservation of milk. The chief arguments in favor of the position taken are: the short time that it now requires for the milk to reach Paris and be distributed; the easy application of cold, which preserves it fully as well without changing its composition; the unpleasantness of the sodium bicarbonate, which, when decomposed by lactic acid, yields a purgative salt very injurious to the health of children.—*Zeitschr. f. Nahrungsm. u. Hygiene*, March, 1888.—*Sanitarian*, August, 1888.

BUENOS AYRES is to have a water supply, the cost of the works for which will be fifty million dollars.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from September 1, 1888, to September 7, 1888.

A Board of medical officers to consist of Major Charles H. Allen, Surgeon; Major George M. Sternberg, Surgeon; Major Henry McElderry, Surgeon; Capt. Edw. C. Carter, Asst. Surgeon, is constituted to meet in New York City on October 1, 1888, or as soon thereafter as practicable, for the examination of Asst. Surgeons for promotion and of candidates for admission to the Medical Corps of the Army. S. O. 203, A. G. O., September 1, 1888.

Capt. J. C. Worthington, Asst. Surgeon, ordered from Ft. Crawford, Col., to Ft. Townsend, W. T.

Capt. J. D. Hall, Asst. Surgeon, ordered from Ft. Townsend, W. T., to Ft. Niagara, N. Y.

Capt. P. R. Brown, Asst. Surgeon, ordered from Ft. Niagara, N. Y., to Ft. Sidney, Neb. S. O. 206, A. G. O., September 5, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, SEPTEMBER 22, 1888.

NO. 12.

ADDRESS IN STATE MEDICINE.

RECENT ADVANCES IN STATE MEDICINE.

The Annual Address by the Chairman of the Section on State Medicine, Delivered at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY HENRY B. BAKER, M.D.,

SECRETARY, STATE BOARD OF HEALTH, LANSING, MICHIGAN.

The By-laws of this Association require that "The Chairman of each Section shall prepare an address on the recent advancement in the Branches belonging to his Section." Thus the subject of this address is fixed; yet, most of us are too busily occupied with professional or official duties to study carefully all of such work reported in all parts of the world, especially as the field in State Medicine is so very extensive, depending upon, and utilizing, as it does, the progress in most of the medical and allied sciences. One must have a very broad view, much leisure, a good knowledge of several languages, and be familiar with the requirements of practical sanitary work, in order to summarize fully the "recent advancement in the Branches belonging to" this Section. I cannot hope to accomplish so much, and, if I could, you could not listen to it in forty minutes; but I shall do the best I can in the time at my disposal to place before the Section a summary of those recent advances in State Medicine which have attracted my attention and have impressed me as useful for our encouragement, for the suggestion of errors or obstructions to be avoided, or of new methods or combinations of facts useful for our progress.

GENERAL PRINCIPLES UNDERLYING USEFULNESS OF STATE MEDICINE.

Sanitarians are not so much nuisance abaters as formerly were the hygienists; and they are more disease-preventers. In the public-health service generally, methods are coming to be more instructive, and less dogmatic and mandatory. Such opposition as that of Herbert Spencer, to boards of health constituted according to the old ideal, does not at all apply to State Boards of Health constituted on the modern plan which

makes their chief functions the collection, collation and dissemination of facts which teach the causation of disease, the best means for avoiding and preventing sickness and deaths, and which facts are from sources so extensive as to be entirely beyond the reach of individuals, but which the people as a whole, through their governmental representatives, can easily collect, collate, and place before all classes of people, to be utilized by such as are sufficiently intelligent.

Modern methods of sanitation are thus in harmony with the law of "the survival of the fittest," if we consider, as I do, that the most intelligent classes, who obey the teachings of sanitary science are best fitted to survive.

Any narrow selfishness, however, which might be engendered in one of this most intelligent class, by dwelling upon the idea that "I am holier than thou," is soon dispelled when he comes to see that no man lives entirely to himself alone; not only is each person to some extent his brother's keeper, but he is dependent on all about him for immunity from dangerous communicable disease, and for safety of life and health in various ways.

The highest selfish interests thus join with the highest benevolence in favor of the widest possible diffusion of sanitary knowledge, and of the most complete obedience to sanitary precepts, ordinances and laws.

INCREASE OF THE PUBLIC-HEALTH SERVICE, AND OF SANITARY PUBLICATIONS.

An important factor in sanitary progress is the increase in the number of persons who enter, more or less permanently, upon some branch of sanitary work. In many of our States such increase is very great. For instance, in Michigan when the State Board of Health was organized, in 1873, there was hardly an active local board of health in the State; very few local health officers were appointed; while for the year 1887-88 over thirteen hundred local health officers were appointed in the State, and many of them physicians who devote considerable time to the work.

The increase in the numbers of our people who live in the cities and villages, the improvements in plumbing and other sanitary appliances, the increasing tendency toward sanitary inspections

¹ The time allowed. Jour. Am. Med. Assoc., June 25, 1887, p. 715.

of such appliances, with the increased number of health officers and sanitary officials, and the greatly increased public interest in sanitary affairs, has built up a class of sanitary and trade journals, which do much for sanitary progress. Many physicians are now or have been health officers. For this, and other reasons, the medical journals seem to contain an increasing proportion of literature bearing upon sanitary administration, and other branches of State Medicine.

But the most important factor tending to increase the demand for sanitary literature is the work of the boards of health themselves, and especially that part of their work which consists in spreading among the people, in popular pamphlet form, the existing knowledge applicable to the restriction and prevention of the most dangerous diseases, including the relations of low ground-water and of contaminated water to typhoid fever, and similar information of immediate practical utility. This work is productive of immediate good in the reduction of the sickness and mortality from such dangerous diseases; and it stimulates a general desire among the people for more knowledge on such vital subjects.

The apparent popular demand for sanitary literature is being met by several of the State Boards of Health, by the publication of a monthly journal which serves as the organ of the State Board which issues it, and as a convenient means of regular communication between the office of the Board and the health officers and others throughout the State who are interested in public-health work. Such a journal is now published in Minnesota, Maine, Pennsylvania, Tennessee, Ohio, Iowa, and perhaps other States. In some of the States the proceedings of the State Board are published quarterly, and distributed quite generally within the State.

ORGANIZATION.

The increased number of persons in the public-health service, with the growing general interest in their work, prompts organization for comparison of methods of work, for coöperation wherever practicable, and for the general promotion of sanitary affairs.

In some of the States this tendency has led to the formation of Sanitary Associations, consisting mostly of physicians and others of the leading thinking classes. The Ohio State Sanitary Association is a notable example; but Associations have been formed in other States. The principle involved is not quite the same as in the "Associations of Medical Officers of Health," in England and in the Province of Ontario; but inclines more toward the popularization of sanitary information and measures among the people generally than toward the advancement of the knowledge of the medical officers of health. The as-

sumption (which is probably correct) seems to be that the medical officers of health are now in advance of the people, and do not, so much as the people generally, need to advance their knowledge of sanitary science or of sanitary administration. However, under the system of free and general distribution of the best that is known, by State Boards of Health, it would seem that the time is near, when, throughout this country Associations of medical officers of health need to be formed, for their own advancement, and for the best interests of sanitary progress.

In Michigan, and some other States, although local Sanitary Associations have been formed, sanitary conventions have, thus far, been the principal method of popularizing sanitary measures. The topics chosen have reference to the the greatest apparent needs of the locality in which the convention is held, such, for instance, as the present methods of disposing of excreta and waste products, and the present source and condition of the water-supply of the city or village, including the exact relations of privy-vaults to wells in the principal business part, and the principal residence portion of the place, and the explanation of the best means for restricting the most dangerous communicable diseases.

These practical questions of vital importance can be so presented by members of State Boards of Health, by leading physicians, lawyers and ministers, and so impressed upon the people of almost any community that thereafter much greater attention will be given to affairs which relate to the public health.

THE NATIONAL CONFERENCE OF STATE BOARDS OF HEALTH.

The increasing intelligence of the people is now tending to stimulate progress by those who aim to lead the people in State Medicine. The most notable organization of this nature within recent years is the Conference of State Boards of Health, a National Association of delegates from State Boards, but having international tendencies, as shown by the fact that it includes delegates from the Provinces of Canada. It has had its fifth annual meeting in Cincinnati, just preceding this meeting of the American Medical Association. It does not supplant the older American Public Health Association, which aims at the popularization of sanitation, and for the advancement of sanitary science, but its work differs from both these functions of the older Association, being largely concerned with the practical questions of official public-health work, and its membership is restricted to officers who represent those who can put in force the conclusions reached by the conference. It is a league which, to some extent, serves to unify the Public-health Service of the United States, and might be utilized in the same direction to a much greater

extent by the United States Government, to supply the lamentable loss of our National Board of Health, or to coöperate with a National Bureau of Health, or with a National Board of Health, should the present Board, or a new one be granted an appropriation.

LEGISLATION: LOCAL, STATE, NATIONAL.

Sanitary laws are commonly supposed to have two functions: if properly published and enforced, they are educational; and they may be enforced in cases where no other course will secure obedience to sanitary precepts. But sanitary laws have other functions. A new general principle of sanitation, before suggested, is important especially in connection with sanitary legislation. According to this general principle of action it would seem that for the interests of sanitary progress, the most important legislation is that which provides for the collection of facts, not only those upon which to base immediate action, but also those out of which to construct sanitary science, that which provides also for the comparison and study of those facts by persons especially qualified for that service, and for the publication of the results of such statistical and other researches for the benefit of all classes of people. The facts necessary for immediate action are as imperatively needed as is the knowledge of the location of a burning building, and for much the same reason—in order that the danger may at once be averted. And, as in the case of a dangerous communicable disease, life and health as well as property are at risk, any ordinary pecuniary interest of the individual should yield to the high moral duty to the public safety, and await recompense from the public. Therefore I agree with Dr. Rohé, our chairman last year, who said: "The *first* requirement then in dealing with infectious diseases from a 'State Medicine point of view' is *notification*, and inasmuch as such notification will never be effected if voluntary, it must be made compulsory.

"The *second* requirement in restricting the prevalence of such diseases is the segregation of patients, and guarding healthy individuals except the immediate attendants, from contact with them.

"The *third* requirement is prompt and thorough disinfection, in other words, the absolute destruction of the infective properties of infectious matter, in whatever that may consist.

"I would therefore declare the watchwords, of the practical and progressive sanitarian in dealing with communicable diseases, to be these three: *Notification, Isolation, Disinfection.*"

There seems to be progress in the first essential (notification) in many parts of the country. In England the area of country coming under that law is increasing, and it is proposed by the local government board² to extend the system of com-

pulsory notification, and perhaps to make the law general, although in that country there has been opposition by some of the medical profession. In Michigan notification of dangerous diseases is compulsory upon householders and physicians, and physicians are allowed a very small fee (ten cents) for each case reported. Only small-pox, diphtheria, and scarlet fever are specifically mentioned in the law, but several other diseases including typhoid fever, and *rötheln*, have been declared to be "diseases dangerous to the public health." Increasing attention to this subject is noticeable in Michigan, in Wisconsin³, in Minnesota, in Maine,⁴ in Iowa,⁵ in Indiana,⁴ in Kentucky.⁴ In New Hampshire, also, a law has been enacted requiring physicians to report all cases of diphtheria and scarlet fever to the local board of health.⁶

STATE LEGISLATION: PROTECTING THE PURITY OF INLAND WATERS.

The last general court of Massachusetts made an appropriation of \$30,000 for the use of the State Board of Health in protecting the "purity of inland waters." "It was thought wise to begin with the largest and most important supplies." . . . "From time to time other water supplies have been examined in this exhaustive manner." . . . "Four rivers in the State have been systematically examined." The results of these examinations are given in the report of that State Board, made January, 1888. The Board has established an experiment station, to determine the amount of sewage that can, in that climate, be purified by application to different soils.

LEGISLATION: NATIONAL.

That the United States Government pays less attention to those highest earthly interests of its citizens—human health, and life itself—than other governments, and even less attention than it gives to the protection of the swine and other domestic animals, is a cause for regret and shame to all intelligent citizens, and especially to physicians, because their attention is so frequently called to the subject, and because they realize how much might be done for the prevention of epidemics, and, more especially, of the sickness and deaths from the most common causes.

As usual, there is now before Congress a bill for a National Health Service.

WHAT PREVENTS NATIONAL LEGISLATION IN THE INTERESTS OF PUBLIC HEALTH.

A brief review of some of the efforts of physicians and Associations may aid to a clearer understanding of the situation.

Fifteen years ago in this same City of Cincin-

² Circular issued Dec. 5, 1887. Published in "City of York, Report on the Compulsory Notification of Infectious Diseases, York, Eng."

³ Sanitary News, Jan. 28, 1888.

⁴ Sanitary News, Feb. 4, 1888.

⁵ Sanitary News, Feb. 11, 1888.

nati, May 1, 1873, I listened to a report to the American Public Health Association made by C. C. Cox, M.D., I.L.D., of Washington, on "The Necessity for a National Sanitary Bureau." The report, and the "Bill to establish a Bureau of Sanitary Science" which had already been presented to the U. S. Senate, are published in Vol. 1, pp. 522-532 of the Transactions of that Association.⁶

Dr. Cox said: "Regarding the continually increasing sanitary wants of our country . . . it occurred to me that our government should advance among the first to conserve the health of its population, and avert the disasters which menace it. With this view I prepared, in 1871, the plan of a National Bureau of Health. This was subsequently submitted, as you are aware, at a meeting of the sanitarians, representing the different sections of the country, assembled at New York, and endorsed by them in a series of commendatory resolutions."

After the reading of the report by Dr. Cox, the American Public Health Association adopted a resolution "that in the judgment of this Association, the establishment of a National Sanitary Bureau, with relations to the general government similar to those of the Bureaus of Agriculture and Education, is highly desirable as a means of promoting sanitary science and the protection of the public health."⁶

November 14, 1873, at the meeting of the American Public Health Association in New York, resolutions presented by myself were adopted,⁷ favoring the project, and for the appointment of a committee representing, so far as practicable, each State in the Union, to memorialize Congress, and to coöperate with a similar committee or "section" of the American Medical Association. Through the belief of the President of the Health Association and others that the time was not favorable, the effort was not vigorous, and it was unsuccessful at that time.

November, 1878, at a meeting of the American Public Health Association in Richmond, Va., I again presented resolutions outlining proposed duties of a permanent U. S. Health Commission, proposing a committee of the Association to memorialize Congress for the establishment of the Commission, and for the appointment of a standing committee on Public Health in each legislative branch of the U. S. Government. The yellow fever epidemic of that year emphasized the need for some action by our government. The Association committee was appointed, nearly every State being represented upon it. Dr. Billings, of Washington, was especially active. Hon. J. H. McGowan, a member of Congress from Michigan, was induced to confer with Dr. Billings, introduce a bill, and labor for its passage. The Na-

tional Board of Health was thus established. For a few years it did excellent work, which was commended by the leading sanitary associations in this country. It had the respect and confidence of nearly every sanitary authority in this country; but, from the first, it had the determined opposition of a few who were in office and power in Washington, and who were eventually able to cripple and finally to defeat appropriations for it by Congress. The distinguished sanitarians who were its first members dropped out, and to-day the Board exists only in name.

In a recent number of the *New York Medical Journal*⁸ is an editorial entitled "The Marine Hospital Service and the Proposed National Bureau of Health," in which is an account of the arguments recently before a committee of Congress for and against the proposed legislation. The arguments for it were mainly by the President of the National Conference of State Boards of Health, and by three ex-presidents of the American Public Health Association, a committee representing the principal sanitarians and sanitary organizations of this country. The only opponent mentioned was Dr. Hamilton, of the Marine Hospital Service, who "submitted a brief." The editorial says: "Under one form or another, the old National Board of Health has been sought to be revived on several occasions, and each time Dr. Hamilton has had to oppose the attempt almost single-handed."

Officers in the medical departments of the army and navy, on the other hand, have favored the National Board of Health or other public health legislation; but it is much easier to prevent than to obtain appropriations.

FOR WHAT PURPOSE ARE WE HERE?

In order to fulfil the duties assigned to me, I have studied again the apparent intention of the founders of this Section, and of those who have contributed to its maintenance. It would seem that there has been and is in the medical profession a profound desire to promote the general welfare by utilizing for the public good those vast stores of scientific and practical information gained by the medical profession, which, although not of much use in the *treatment* of disease, are capable of a much more important service in the *prevention* of disease. I think there is a growing belief that there is a higher plane than even the exalted one on which the medical practitioner has long stood, and that if quite a large proportion of the medical profession were employed and paid for their efforts for the prevention of disease, their relations to the people would be of the noblest kind. The methods which tend in this direction are those which seem to have actuated the founders of this Section—those which favor the formation of State and other Boards of Health, and (as the

⁶ Pub. Health: Trans. of Am. Pub. Health Ass'n, vol. II, p. 537.
⁷ Page 543, vol. II, Pub. Health: Trans. Am. Pub. Health Ass'n.

⁸ March 24, 1888.

name of the Section, "State Medicine," implies) build up the legal organizations, local, State, and National, through which only can the public reap the results of the progress in sanitary science.

But those of us who have watched the progress of this Section know that although the Section has almost uniformly held back from recommending specific legislation, sometimes even discouraged attempts at public health legislation, it has always favored that other essential to progress in this direction, the building up of a sound sanitary science for the use of the State, whenever the State shall become sufficiently intelligent to utilize it.

Nearly all the papers and discussions before this Section are expected to contribute to this scientific branch of our work; therefore, if numerous important lines of work in the sanitary sciences, during the past year, are not mentioned in this address, they are likely to be brought out during this meeting, especially those relating to the topics especially chosen, "Malaria and the Causation of Fevers." There has been considerable progress in the knowledge of the causation of fevers, but a satisfactory mention of the lines of work would take too much of the time allotted to this address.

DEVELOPMENT OF THE GERM THEORY OF DISEASE.

Progress seems to be in waves, and greatest along certain lines. Recently many have been engaged in investigation and experiment in developing the germ theory of disease. Great progress has been made, considering that it has been largely the contributions of individuals; for as a rule those for whom this work is most valuable—the common people themselves—have not yet awakened to the importance of such work so as to demand of their representatives that it shall be maintained by the governments. The Imperial Government of Germany has wisely maintained the laboratory in which Dr. Koch's great contributions to science have been taught to large numbers from many countries. In this country the General Government has done little worthy of special notice, but individual officers, in several branches of the U. S. Service, have contributed much toward progress in this direction, notably Dr. Sternberg, of the Army Medical Department.

A writer in *Science*⁹ has lately published results of an inquiry by circular, addressed to each of the medical schools in this country, asking questions concerning the germ theory, and what is being done about it. Replies were received from those colleges in which the greatest number of students is taught. He concludes that quite a number of bacteriological laboratories have been established in connection with our larger medical schools.

They are under the charge of competent directors, and are places where original research is being carried on, and where students have an opportunity to familiarize themselves with the subject in a practical manner. American medical schools are thus doing their share in this research in this manner, and the endeavor to advance our knowledge of bacteria and their relation to disease.¹⁰

In Baltimore there is a well-equipped bacteriological laboratory under the direction of the Professor of Pathology of the Johns Hopkins University. In Brooklyn,¹¹ the Hoagland Laboratory—the gift of Dr. C. N. Hoagland—under the immediate supervision of that gentleman, who provided the funds for the building and its equipment, "will supply all the facilities, both for students and for advanced investigators, which can be found in the best-equipped laboratories of Europe."

In Missouri the Legislature has appropriated \$5,000 for "the creation of laboratories for bacteriological study and investigation, and for the culture of vaccine virus, in connection with the State University at Columbia."¹²

A STATE LABORATORY OF HYGIENE.

In Michigan, the Legislature has appropriated \$35,000 for the building and equipment, at the State University, of two laboratories, under one roof, one being a laboratory of hygiene. The building will be ready for occupancy next October. Dr. V. C. Vaughan, Member of the State Board of Health, and Professor of Hygiene in the University, is Director of the laboratory.

Prof. Vaughan's first Quarterly Report of work (the chemical laboratory being temporarily used) has been published by the Michigan State Board of Health,¹³ and includes a history of important contributions to sanitary science. He has isolated the Eberth bacillus of typhoid from water believed to have caused that disease, he has caused a disease resembling typhoid by injecting these bacilli into an animal, and has caused a rise of body temperature in animals by injecting a ptomaine, formed by those bacilli, but sterilized before its use. Dr. Vaughan has been able to find these bacilli in the air of a house-drain into which discharged a soil-pipe carrying discharges from a typhoid patient. He has made cultures of the bacilli there found. Other cases of typhoid fever had apparently been caused by the inhalation of air contaminated by emanations from that same house-drain.

A SPECIFIC CAUSE OF TYPHOID FEVER.

That filth alone will not cause typhoid fever, in the absence of the specific cause, is constantly becoming more evident. A notable instance is given by Dr. F. H. Blaxall, R.N., in the *London Practitioner*.¹⁴ An outbreak of typhoid fever oc-

⁹ H. W. Conn, *Science*, March 16, 1888, pp. 123-6.

¹⁰ *Science*, March 16, 1888, p. 125.

¹¹ Dr. Sternberg's Address, *Sanitary News*, vol. xi, p. 50.

¹² Dr. Homan, *Sanitary News*, January 28, 1888.

¹³ Proceedings of the Mich. State Board of Health, January, 1888.

¹⁴ August, 1887, pp. 157-160.

curred among persons using water from a spring which, although known to be badly contaminated by excreta, had been used without causing typhoid fever for a period of fifteen years; yet soon after the arrival of cases of typhoid fever in the vicinity of the spring, 36 families were invaded, with some 80 cases of recognized typhoid fever, 8 proving fatal. All the persons attacked had drunk of the water from the spring. In this instance, the disease was not communicated from person to person, nor to persons who used the same water-closets as did those who had the fever.¹⁵ This evidence is especially of importance as to the protection of the water supply from typhoid excreta, and of the disinfection of all excreta from typhoid patients.

BACTERIA AND SUMMER DIARRHŒA.

Results of experiments and bacteriological observations in summer diarrhœa have been published.¹⁶ Many bacilli were studied, but one chief bacillus, which was found, somewhat resembled that of Asiatic cholera, but is shorter and thicker. Cultivation of bacilli from air from sewer ventilators showed some which resembled those found in the organs of persons dead from diarrhœa, but they were much slower in their growth. Those from the intestines developed rapidly, liquefied jelly became alkaline, and bacilli of the fifth generation emitted a powerful odor of decomposition. A very small dose of the artificially cultivated microbes produced a smart attack of diarrhœa.¹⁷

ALBUMINURIA FROM SEWAGE POISONING.

Dr. George Johnson, in the *Brit. Med. Jour.*, March 13, 1888, "directs attention to the fact that among the many causes of blood contamination and consequent albuminuria, sewage poisoning is by no means an infrequent one."¹⁸

BACTERIA IN CEREBRO-SPINAL MENINGITIS.

Fränkel, Weichselbaum and others, in a series of cases of primary cerebro-spinal meningitis, have obtained pure cultivations of Fränkel's pneumococcus¹⁹ which, I suppose, is the coccus first discovered by Dr. Sternberg, in his saliva, (*Micrococcus Pasteuri*, Sternberg), and which is fatal to rabbits, and has been found in pneumonia more frequently than other microorganisms. Weichselbaum has also described a new coccus in six cases of idiopathic cerebro-spinal meningitis.²⁰ Dr. F. Goldschmidt has reported the same microorganism in one case;²¹ and Dr. Biggs, of New York, in one case, found a diplococcus probably identical with the one described by the other two observers.²²

THE SPECIFIC CONTAGIUM OF SCARLET FEVER.

That there is a specific contagium of scarlet

fever is not doubted now, I suppose, by any intelligent physician; but just what that contagium is has not yet been satisfactorily proved. The results of Dr. Klein's investigations into the subject, in connection with the Hendon cow disease, supposed to be scarlet fever in the cow, have been strongly combated.²³

Experiments by Dr. Edington, of Edinburgh, (made at the suggestion of Dr. Jamieson,) carried on with bacteria from the blood, organs, and skin in different stages of scarlet fever, revealed one bacillus constantly present in the blood before the third day of the fever, and in the desquamating scales after the twenty-first day. This he concludes is the contagium of the disease.²⁴

DIPHTHERIA IN MAN AND ANIMALS.

Dr. Turner's report to the Local Government Board,²⁵ in England, in 1887, collected what was known on the subject of diphtheria in animals. Instances were given of its spread in pigeons, in fowls, and afterwards to families of persons, among swine, horses, cats infected from man and man from cats, successful inoculation of cats, and the occurrence of diphtheria among shepherds after the disease had prevailed among sheep. Bacteriological studies of diphtheria have led Loeffler to conclude that the bacillus is different in the calf and in the fowl, and still different in man.²⁶ Such discrepancies remain for further investigation. Probably much knowledge, useful for the saving of human life, might soon be worked out if the people would maintain more workers in this field of investigation.

SUPPURATION ALWAYS DUE TO MICROÖRGANISMS.

A FUNCTION OF THE LEUCOCYTES.

Although migration of leucocytes occurs under a variety of conditions and circumstances, the general principle that suppuration is always due to the action of microorganisms seems to be established.²⁷

A recent writer has said:²⁸ "There seems to be but little doubt that there exists a constant relation (as regards several of the infectious diseases certainly) between the amount of suppuration and the degree of immunity that different animals show to the respective diseases. The greater the emigration of leucocytes the greater is the insusceptibility, and *vice versa*, the leucocytes apparently destroying, or counteracting the effects of, the microorganism. Suppuration thus comes to be a conservative process, protecting the system from the action or entrance of the microbes. Perhaps this is always its function."

At any rate, knowledge of the relations of the white corpuscles of the blood to the specific mi-

¹⁵ London Practitioner, August, 1887, pp. 157-160.

¹⁶ H. Tomkins, M.D., London Lancet, August 20, 1887, pp. 361-3. Abstract in N. Y. Med. Jour., October 1, 1887, p. 390.

¹⁷ London Lancet, August 20, 1887, p. 363.

¹⁸ London Practitioner, April, 1888, p. 287.

¹⁹ New York Med. Jour., March 17, 1888, p. 288.

²⁰ British Med. Jour., August 20, 1887. N. Y. Med. Jour., October 1, 1887, p. 390. Science, February 10, 1888, p. 67.

²¹ British Med. Jour., June 8, 1887. N. Y. Med. Jour., October 1, 1887, p. 390. N. Y. Med. Abstract, July, 1887, pp. 251-5.

²² Abstracted in Brit. Med. Jour., August 20, 1887, pp. 416, 417, and briefly in N. Y. Med. Jour., October 1, 1887, p. 390.

²³ N. Y. Med. Jour., March 17, 1888, pp. 288, 289.

croörganisms of disease seems to be progressing.²⁴

PERIOD OF INCUBATION.

Some experiments by Prof. Vaughan, of the Michigan State Board of Health, indicate that the length of the period of incubation of typhoid depends much upon the number of specific bacteria taken into the body, and whether or not a communicable disease shall be contracted may depend upon the quantity of the specific cause which gains entrance to the body.

DIAGNOSIS OF CHOLERA IN DOUBTFUL CASES.

Further evidence of the practicability of aiding the diagnosis of cholera in doubtful cases, by cultivations of the microörganisms from the intestines or the excreta, has been supplied by Drs. S. T. Armstrong and J. J. Kinyoun, of the U. S. Marine Hospital Service, and Drs. H. Biggs and T. Mitchell Prudden, of New York.²⁵

CAN CHOLERA BACILLI REPRODUCE IN WATER OF NEW YORK BAY?

The salt water in New York Bay has been "Sterilized and inoculated with pure cultivation of the spirilla of Asiatic cholera and also of Finkler and Prior," by Dr. J. J. Kinyoun, of the U. S. Marine Hospital Service,²⁶ with the result that "These spirilla have not only been kept alive, but have also greatly increased in numbers."²⁶ The inference is published that "If dejecta from cholera patients should be thrown into the lower bay, cholera could gain a foothold on the contiguous shores where every condition favorable to its development and propagation sometimes exist."²⁶ The temperature at which the cultivation was maintained is not reported; neither is the temperature of the water at the shore in the most dangerous season, but if there is a probability that such development can occur there, further experiments and observations of temperature will be awaited with great interest, because of the practical importance of the subject, for the safety of this country from cholera.

QUARANTINE.

There has apparently been great progress in keeping certain diseases out of this country by means which we yet call quarantine. Formerly yellow fever was so frequently introduced into New Orleans that many believed it was endemic there; and cholera was generally brought into this country whenever it was prevalent in Europe. Now both of these diseases are kept out. The great money losses to trade in New Orleans have tended to aid sanitarians in perfecting the quarantine at that point. Under the able leadership of that brilliant sanitarian, Dr. Joseph Holt, the quarantine at New Orleans has been brought to a high state of perfection. Perhaps the best evi-

dence of the possibility of general progress, however, is the general criticism of what has heretofore received no attention. As an offset to the criticism of the quarantine system at New York, it should be noted that during the last year that port of New York has been tried—cholera was brought to it, and, so far as is now known, it was not allowed to gain a lodgment. Aside from speaking well of a bridge that allows one to cross in safety, there are other considerations which should make us slow in trying to displace State or local quarantines; there are vast State and local interests in trade and travel which should join with the interests of public health in building up and improving local quarantine administration. Thus far, the United States Congress has not exhibited such a steadfast purpose to guard the lives of the people as to inspire confidence in the United States Government as the best and only protector of the lives and health of the American citizens. Just now there seems to be those who urge that the National Government shall gain control of all quarantine. Without considering the constitutional objections, it seems to me that it will be much safer to hold fast to that which we have, at least until such time as the National Government shall demonstrate its ability to do as well. What is really needed is that the local quarantines shall be perfected; that the National Government shall add its best services to those of the States and localities;²⁷ and that those other dangerous communicable diseases, diphtheria, scarlet fever and typhoid fever, which cause much more sickness and deaths than do yellow fever and cholera, shall also be excluded by quarantine. If it be argued against this plan that those diseases are endemic, it may be replied that before its exclusion yellow fever appeared to be endemic; and small-pox is still, yet we try to exclude it, and undoubtedly save thousands of lives thereby, and might exclude it almost entirely by more perfect methods.

YELLOW FEVER.

If, as reported, yellow fever is now present in Florida, there is cause for alarm which should lead to extraordinary efforts to limit that dread disease, because it is early in the season, there is no State Board of Health in Florida, and the inspection of travel, isolation of infected persons, disinfection of all infected articles—those measures which constitute the new "quarantine"—are not easily enforced, and in inland places can be avoided by those familiar with the locality. Nevertheless, these measures are the most promising yet suggested.

SMALL-POX.

Since January 1, 1888, small-pox has been reported in twenty-one States of this Union.²⁸

²⁴ N. Y. Med. Abstract, March, 1888, p. 56. Also Lectures by Prof. Ray Lankester, Sanitary News, Chicago, April 21, 1888.

²⁵ N. Y. Med. Jour., Nov. 12, 1887, pp. 546-7 and 548-9.

²⁶ Sanitary News, Feb. 18, 1888, p. 188.

²⁷ There is now a bill before Congress to improve the National quarantine, which it is hoped may become a law. It has passed the U. S. Senate.

²⁸ Maine, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, Delaware, Ohio, Kentucky, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Kansas, Colorado, California, North Carolina, Tennessee and Louisiana.

Small-pox is now reported in nine States as follows: Connecticut, California, Colorado, Illinois, Kentucky, New York, Minnesota, Pennsylvania and Wisconsin. Although small-pox is still (or was recently) present in nine States, it is not spreading, and it speaks highly for the utility of the public-health service generally throughout this country that although introduced into twenty-one States of the Union, small-pox has not been allowed to spread to any great extent, except in California, where its restriction, on account of the Chinese, was especially difficult.

CHOLERA SHOULD BE MADE A DISEASE OF THE PAST.

Dr. W. J. Simpson, Health Officer of Calcutta, has reviewed, in the *Indian Medical Gazette*, the evidence as to the influence of season, rain-fall, and water-supply upon cholera, accepting the evidence brought out by Dr. Payne²⁹ and elaborated by Dr. O'Brien,³⁰ that in Calcutta the cholera was greatly reduced by the improved water-supply, and the evidence collected by myself that it was greatly influenced by the rainfall,³¹ and he has added much to the completeness of these converging lines of evidence. Dr. Simpson says: "In the common condition of polluted wells and tanks, and the habits of the people, we have an explanation of seasonal cholera prevalence in Calcutta, synchronous with cholera prevalence in the neighborhood, while the increased scarcity of water in the town during the last five or six years, culminating in such expedients as underground tanks for collecting water which ought to reach at least the first floor of the houses, we have a fair explanation of the increased cholera prevalence of late years in Calcutta, out of proportion to the period between 1870 and 1880." Speaking of the effect of the rains, he says: "They purify the air, they wash the filth from the soil, they purify and give an abundant supply of water to the wells and tanks; but, in addition to these things, in the town they perform a most important function, they flush the drains." Dr. Simpson closes his forty pages with these words, "A study of the distribution, progress, and seasonal changes indicates that the chief factor is want of pure water."

Elsewhere I have suggested that "If the prevention of cholera in its home is so largely dependent upon the rainfall and upon a good water-supply, one direction is thus indicated for most successful efforts for its prevention in this country."³²

Here I wish to suggest that, inasmuch as all the cholera throughout the world is derived from the small endemic area around Calcutta, the nations of the earth might well undertake an inter-

national work for doing away with that "chief factor" of cholera prevalence in the endemic home of cholera, namely, that "want of pure water." Two-thirds of the cholera mortality in Calcutta has once been stopped in that manner.³³ The inference is plain that the other third might be stopped by more thorough but similar means, and if in Calcutta then also in the area around Calcutta. The work would be difficult, partly because about Calcutta the ground-water is brackish, but I believe the scheme is entirely practicable. It would be a noble mission to accomplish this, and, as an international work, it would "pay" in dollars and cents.

PURIFICATION OF WATER BY CHEMICALS.

Progress has been made in our knowledge of methods of improving public water-supplies. The practice of adding a minute quantity of alum to water in order to clarify it, is an old and very familiar one. Recently one method of applying it continuously to public water-supplies has been patented. Prof. Albert R. Leeds, of Hoboken, N. J., added alum, in the proportion of half a grain to a gallon of water, and found, with the precipitation of peaty matter, etc., a reduction of the bacteria to such an extent that whereas before precipitation it contained 8,100 colonies per cubic centimetre, after precipitation the supernatant water contained only 80 colonies. They were all the bacterium *lineola*, and by filtering this supernatant water through a double thickness of sterilized filter paper into a sterilized tube, he found no bacteria in the filtered water.³⁴ An interesting question is, whether or not the bacteria of typhoid fever would be removed by this same agent in a similar manner. Prof. Leeds suggests the addition, also, in certain cases, of lime or soda, or a minute amount of soluble iron salt, like ferric chloride, and its removal, together with the bacteria, by filtration.

VITAL STATISTICS.

Vital statistics supply an important basis for public-health work. We are dependent upon mortality statistics for our knowledge of what are the greatest dangers to life, and of what progress we are making in the prevention of deaths. Although the importance of vital statistics is well known to sanitarians, it is not yet appreciated by the people generally; and the practical work with statistics is so difficult that comparatively few master the general principles. There are no journals or ready means of comparison of views among statisticians; therefore progress is slow, especially in laws for the collection of vital statistics. Yet there is progress toward the collection and the improvement of some statistics in this country.

²⁹ Arthur J. Payne, M.D., Surgeon-Major, Health Officer of Calcutta. Report on Sanitary Measures in India in 1876-7, presented to Parliament, London, Eng., 1878, p. 118.

³⁰ J. O'Brien, M.D., Surgeon-Major, etc., Annual Rep. of Health Officer of Calcutta, 1884.

³¹ Trans. Am. Pub. Health Assoc., p. 165, vol. xi.

³² Trans. Am. Pub. Health Assoc., pp. 154-165, vol. xi.

³³ Trans. Am. Pub. Health Assoc., vol. xi, p. 165. Also, Cholera Mortality in Calcutta, Simpson, p. 39.

³⁴ The Medical News, Phila., Sept. 3, 1887, p. 262.

In Minnesota, Dr. Hewitt, Secretary of the State Board of Health, has within the past year effected considerable in this direction. In the Connecticut State Board of Health Bulletin for February, 1888, Dr. Lindsley, Superintendent of Vital Statistics, says: "For the first time since these monthly bulletins have been issued, reports have been received at this office from every town in the State." The last quarterly report of the Illinois State Board of Health says: "For the first time since the collection of vital statistics was begun, all the counties have made returns of births and deaths."

SICKNESS STATISTICS.

For some purposes, including those of immediate action for the restriction of dangerous diseases, reports of sickness are much more valuable than the reports of deaths. An account of the methods successfully employed for several years in Michigan was given before this Section last year. Those methods are being continued in Michigan, and the State Board of Health of Ohio has established methods somewhat similar, which promise very useful results.

THE ETIOLOGY OF DISEASES.

Sickness statistics are especially valuable in studying the causation of diseases. The sickness is nearer than the deaths are to the time of the causation of the disease. The statistics of sickness and meteorology in Michigan have proved that most of the important diseases are controlled by conditions of the atmosphere. Even such diseases as small-pox and scarlet fever, due to specific causes, have close relations to the coldness and dryness of the air inhaled. This knowledge does not antagonize the importance of isolation and disinfection in such diseases, but it shows why these measures are especially important when the air is cold and dry; and, inasmuch as the virus of those diseases clings for a long time to infected articles, it explains why, unless disinfection is enforced at all times, these diseases tend to break out and spread during the cold seasons of the year. The explanation is found in the fact that nearly every one of the diseases of the throat and air-passages is increased after the inhalation of cold dry air. Communicable diseases which enter by way of the air-passages thus find at such times a most easy entrance. Consumption is found to follow the same law, increasing after the cold dry season of the year, and decreasing after the warm moist season.

It appears, therefore, that there has been great progress in our knowledge of the relations of sickness to meteorological conditions, so that, in Michigan at least, we are now able to say under what meteorological conditions each one of many of the most important diseases will increase or decrease in prevalence. The times, or at least the conditions of the rise and fall of the sickness

from these diseases³⁵ can be predicted in advance with almost as much accuracy as can the recurrence of the seasons. This may seem to you like laying claim to one of the grandest of recent human achievements, but I think the statement is strictly true, and this knowledge of the conditions tending to the occurrence of diseases, should aid us greatly in the adoption of measures for their prevention.

THE PRESIDENT'S ADDRESS BEFORE THE AMERICAN RHINOLOGICAL ASSOCIATION.

Delivered at the Annual Meeting, Cincinnati, Ohio, September 12, 13, and 14, 1888.

BY CARL H. VON KLEIN, A.M., M.D.,
OF DAYTON, OHIO.

FELLOWS OF THE AMERICAN RHINOLOGICAL ASSOCIATION:—Under the present system of modern organizations, be it a political government, a commercial or scientific organization, be it ever so small, it is demanded from the head of such government, or such commercial or scientific organization, to deliver an annual message or address. A duty which I am called on to fulfil, regardless of my ability, and probably my errors recorded for generations to come; for words are like milk, which, once being drawn from its original source, can never be returned again. At this age of remarkable discoveries and wonderful developments in science, one might not at ease deliver his sentiments without fear that some one will reply to his errors, as times are not as they used to be. Three hundred years ago, could a person have been put to sleep and have continued in that state fifty years, on awakening and returning to the schools of medicine, he would have found the same textbooks, the same mode of teaching, the same elements of thought, perhaps without a single change.

Now, let a person remain in seclusion for not more than five years, on returning he would find many changes in the teaching and practice of medicine. For medicine in this century comes and departs with the fashions of garments, many have died with the Grecian bend, and as many more will die with the present mode of the posterior phenomena. The continual shifting in theoretical medicine gives a theory, but a short lease of life. A new theory established to-day, after laborious and tedious experiments, discarded to-morrow. Fruitful as has been the present age in changes of medicine, yet can any one of our medical colleges boast of a professor's chair on Rhinology? In many it is so entirely unknown,

³⁵ Influenza, tonsillitis, bronchitis, pneumonia, croup, diphtheria, scarlet fever, small-pox, consumption, remittent fever and typhoid fever. Tables and diagrams proving this, relative to some of these diseases, are published in Trans. Int'l Med. Cong., Washington, D. C., 1887.

that it is not even regarded as an object of secondary importance.

The Talmud relates that Rabbi Huna once asked his son why he did not attend the medical lectures of Rabbi Chisda? "Because," replied the son, "he only treats of temporal and wordly concerns." "What," said the father, "he occupies himself with that which is necessary for the preservation of human beings, and this you call wordly affairs!" Trust me, this is among the most estimable of studies. I will as well say to those who consider Rhinology of a minor importance that it is the most worthy study in the science of medicine. With the complete modern scopic inventions one cannot but help to progress in the investigations of diseases, and discover afflictions through the rhinol cavities diseases of other organs.

The rhinoscope brings before us stupendous facts which we are called upon to observe in our daily practice, which gives advantages in treating diseases of more obscure cavities, and lessens the suffering of the human race, and improves the health of many who are by nature predisposed to inroads of hasty death.

I must confess that I am unable to understand how a physician can treat a disease in which he received no instruction, and how a profession like ours intended self sacrifice to devotion or relief of human suffering could be guilty of empiricism. I consider those who treat diseases for which they are neither qualified nor prepared empirics, however conscientious and faithful a follower he may be of the catalogue of diseases contained in his symptom book. Yet I hold it dishonest if he tampers with that to which his eye is neither trained to see nor his hand to perform.

No branch of the healing art has, indeed, been marked with more empiricism than Rhinology; she struggles against far greater difficulties than any other branch of specialistic medicine, for both ignorance and prejudice have lent their aid toward retarding its advancement. It is a common thing for a traveling imposter to announce himself to the public as a catarrh specialist in addition to being a specialist of all other organs of the human body, while the regular practitioner as well, with his bulb spray, is ready to make fifty cents whenever he can, regardless of his brother's toil, and all his brother has learned by sacrificing with midnight oil to the knowledge of modern medicine.

As long as a physician brings his wisdom into market as an article of commerce, we cannot expect from him but to do anything for a remuneration, he will undertake to treat disease, even if he knows that he is deficient in that branch. There are many specialists who are pernicious to their class by dealing with their specialty like a merchant, who tries to sell other goods if he has not the article you call for. If you will ask him

for satin, which he has not in stock, he will aim to sell you silk; just so with dishonest specialists. They will try to make their patients believe that the disease of the organs afflicted come from diseases of their specialty, for the sake of gaining gold, which has always been a snare to men. Oh, gold! Chief source of hills, corruptor of life, that turneth all things wrong!

"Gold breaks through every sacred tie,
And bids a friend or brother die;
The fruitful source of kindred strife,
Gold would not spare a parent's life.
Long wars, and murders, crimes untold,
All spring from the cursed thirst for gold."

Physicians of vicious practice are doubly pernicious, being not only guilty of immoral practice themselves, but likewise of spreading them far and wide among their fellow practitioners, who profess better things. It is equally wrong to treat maladies in which diagnosis cannot be made, as it is to treat patients who apply for treatment of diseases with which they are not afflicted. "To those who are not sick the physician is useless, and the pilot to those who do not sail."

Cicero says: Those are wise monitors who teach us to do nothing of which we are doubtful, whether it is honest or just; for whatever is honest, manifests itself by its own lustre, but doubt implies the entertainment of injustice. Let me not, however, be misunderstood. It would grieve me even to be suspected of the folly and injustice of promiscuous accusation. Believe me that no one is convinced more than I that the medical profession possesses the highest grade of human respect, but there is never a garden ever so beautifully cultivated that has no weeds. The profession to which we belong is not an indolent occupation. Look at it's history and study the magnitude and quality of it's labors. Why has it done all this? What would it have done if it had not ambition and aspiration and much heart-hunger? Has not the medical profession had to fight it's way from the beginning of the history of man? What profession is there that has accomplished anything for which mankind are the better? Every branch of modern science, every field of modern research, every pursuit which has been under the subject of modern study has been cultivated by the medical profession. Look at the authors of every branch of specialistic science, and no one without the title of doctor of medicine, should such a profession be guilty of having within it's faculty malevolent fellows, who would be ready to commit any crime by treating suffering humanity for no other purpose but to their coffers fill? Branded with Ovid's description of deceit to whom all fingers point:

"Hither comes the tradesman, having a girdle around his robes, and in a state of purity draws

some of the water to carry it away in a perfumed urn. He sprinkles his hairs, too, with the dripping bough, and in a voice accustomed to deceive, runs through his prayers O, Mercury! or have invoked the great Godhead of Jove, whom I did not intend to listen to me. But give me profits, give me the delight that arises from gain, and grant that I may find it lucrative to impose upon my customers."

Now, wherein lies the remedy? Gentlemen, the only true solution is a thorough medical education. I maintain that no one can receive a thorough medical education, without a thorough academical training, the mind that is trained to academical knowledge is inspired to a nobler and sublime course in life, in righteousness, piety, benevolence, industry, sobriety, equity, and frugality, kindled with aspiration, for a special pursuit in science to whatever calling by nature of human duty he may be assigned to. If the physician possesses an academical knowledge, he will make the boundless science of nature his study, he will aim to enquire from the beginning of the creation of man, and turn every stone to find inscriptions that may be engraved by organic life. He will form exalted ideas of monuments of primeval antiquity, and make use of all antemundios ways that may be conjured from the outmost bosom of the earth, in order to throw a bright light upon development of medicine. Such men can have no other motive than human welfare. And when they read the works of great men which existed in all generations, whose carcasses have long decayed, but their heroic name still lives, then they are kindled with high aspirations and are anxious to become heroes in the conquest of nature. Thorough education make men gentlemen by habit, by custom, by civilization, by law, and by dress. From the history of the infancy of our race unto the present day, developments of trades and arts are emerged from their primitive state to a perfection, by those who devoted their attention to one kind of skill, and made life almost double its value.

Those stupendous facts in which the whole spirit of the 19th century moves is due to a higher grade of education. In this age of multifarious learning, in which the whole spirit of humanity powerfully and wonderfully moves, cannot, as formerly, be overshadowed by ignorance and superstition. Thorough education will dissipate the darkness of empiricism and disloyalty to humanity. The inventions of surgical instruments is the wonder of this generation. Every day we hear of some new design that harnesses a new force, and assists in means of curing disease. The most useful of all of them are the different scopical inventions, and by their aid physicians are enabled to make correct diagnosis which leads to a rational treatment of disease of more obscure cavities. To the scopical appliances

we are greatly indebted for the development of specialties in the practice of medicine, and yet has it not developed charlatans and empiricism? Has not the vaginal speculum been the cause of producing so great an army of gynæcologists that 99 per cent. of the young men who graduate in their schools, regardless of their pathy, immediately equip themselves with a chair and a speculum? Has not the rectal-speculum encouraged the so-called pile doctors? And has not the rhinoscope been the means of producing thousands of traveling catarrh specialists, who pretend to see more with their appliances than the ordinary intelligent physician?

"The doctor's optics must be keen,
Who sees what is not to be seen."

Gentlemen, these obstacles may indeed be great, yet, not insuperable, and we should not allow them to daunt our spirit.

I now come to that which to us is the most painful and dearest part of our duty, and on which the spirit of our entire profession is based, and that is charity. We may ask ourselves, might not a subdivision in our profession cause great destruction to the essence of our occupation? Will it not drive from our doors charity patients? It is necessary for a specialist, in order to secure the comforts of life, to charge larger fees for their services than the public has been accustomed to pay general practitioners. This being understood by the poorer classes, might not they fear exorbitant prices, and in all probabilities suffer from painful and dangerous disease before they would venture to consult a specialist. There exists three classes of charity patients:

1. Those that ask charity.
2. Those that are prevented from asking.
3. Those that cannot ask.

The first is the one that justly applies for it. The second are those who are deprived of the liberty of asking, by being in prisons, asylums, almshouses and hospitals; they cannot receive any other treatment than that furnished by the institution. Such institutions generally have physicians who, by their political influence, have mastered the entire science of medicine. The third is the most pitiful of all, and in the pride of charity he suffers the pangs of death; aside of fearing false modesty of exposure, he also dreads rejection to his askings of his fellow men.

Gentlemen, let it be known that we are not specialists for the purpose of gain, but from conviction that the knowledge of medicine is too great a science for one man to accomplish as a whole, and that we are not practicing for revenue only; we are also ready to receive any one that applies to us for charitable treatment. Let not this beautiful passage of the New Testament be cast upon us: "Though I speak with the tongues of men and of the angels, and have not charity, I am become as sounding brass, or a tinkling

cymbal." Those who give charity to suffering for the purposes of fame, is mockery and indignity; he who uses the crown of charity in order to gain, deserves not the name physician. Let our Association become famous not only in the annals of science, but also for philanthropy. Let us not be in a hurry for wealth, let us not immerse ourselves in a simple study of augmenting a fortune and lose the art of reason by deserting the post of a physician. Let us also be specialists in philanthropy. Look at the history of philanthropists, and you will find that they are all specialists in their cause. The immortal Valentine Haüy spent his life in philanthropy for the blind; Johannes Falk, the philanthropist for children; Henrich Pestalozzi, the philanthropist of education; Augustus Herman Francke, philanthropist of orphans; Bartholomew de Las Casas, philanthropist to American Indians; John Howard, philanthropist of prisoners; Sir Moses Montifiore, philanthropist of the oppressed by religious persecutions, etc.

The true physician should be the eyes of the blind, the ears of the deaf, the tongue of the dumb, the brain of the imbecile, and the limbs of the cripple.

By following this rule our Association will become prosperous and renowned and conspicuous among men. While our Association is still young, yet it deserves congratulation for its past success for her wonderful work in progress of practical suggestions in rhinological appliances, and of treatment in diseases of rhinology we can congratulate ourselves for opening the broad gates to the obscure cavities of the upper respiratory tract. We can congratulate ourselves for its wonderful development in training and educating the world to the spray method, to the use of absorbent and essential oleates, for the revision of proper pathological nomenclature, for educating the physician to look after the upper respiratory tract, whilst he is making an examination of the entire body, and for calling the attention of the ophthalmologist and otologist to look for turbinated and other processes that might have produced disease of the organs in their specialty. We can also congratulate ourselves for the world-renowned repute, for the wonderful growth of our organization, and more so for the chosen quality of its members.

In conclusion, gentlemen, I will thank you for the great honor you have bestowed upon me by making me chief magistrate of this worthy organization. You may feel assured that no one is more sensitive to its dignity than I. I also thank you in the name of my friends and associates, who feel highly honored by my elevation. Trusting that we will live and prosper to see every one of our Fellows to pass the high honor which I am now about to deliver to some one more worthy than my humble self.

ORIGINAL ARTICLES.

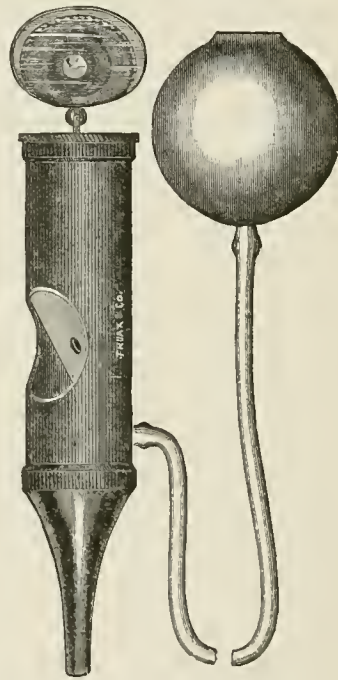
A NEW OTOSCOPE (PNEUMATIC) FOR THE DIAGNOSIS OF MIDDLE-EAR AFFECTIONS UNDER PASSIVE MOTION.

AN IMPROVED TONSILOTOME. A NASAL SPECULUM.

Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Ninth Annual Meeting of the American Medical Association, May, 1888.

BY SETH S. BISHOP, M.D.,
OF CHICAGO, ILL.

Preliminary to a discussion of pneumatic experiments upon the ear, it will be a natural proceeding to describe the instrument by means of which we may produce and observe the effects of passive motion in the drum.



The pneumatic otoscope which I have devised for the purpose named consists of a small milled cylinder with an ear-funnel of the most serviceable pattern at one end, and an eye-piece containing a lens, around which revolves an adjustable mirror, at the other end. In the side of the cylinder a spacious aperture admits the light to the illuminating surface beneath. At the funnel end of the instrument is a pneumatic chamber provided with a flexible tube ending in a rubber bulb, or a diminutive syringe, or a lip-piece, as one may prefer. Objection might be made to using the lip-piece for producing suction for fear that the air from the external auditory meatus might enter one's mouth, but it cannot do so if the funnel is properly adjusted to the canal, for the air chamber of the otoscope represents many times the volume of the column of air contained in that

part of the meatus that lies between the end of the funnel and the drum. It is necessary to exert only slight suction force to cause excursions of the drum membrane sufficient for our purpose. The tip of the funnel should be covered with a section of the thinnest soft rubber tube, about one inch in length, to insure an air-tight fit into the meatus. If the opening of the canal is very large the rubber tube should be rolled back upon itself, so as to form a shoulder on that part of the funnel which closes up the mouth of the meatus when the otoscope is inserted. The rubber not only secures a perfect adaptation of the parts to each other, but prevents the funnel from pressing uncomfortably against the walls of the canal. If the meatus is very narrow, a small section only of the rubber should be slipped well up on the funnel to form the shoulder, leaving the end free to enter about half an inch. When it is to be employed as an ordinary otoscope, without the pneumatic experiment, the rubber tip need not be slipped over the funnel.

This instrument is the result of a considerable experience with Siegle's pneumatic speculum, improperly called an otoscope. The advantages of the pneumatic otoscope over the speculum are: First, it is self-illuminating, not requiring the aid of a hand mirror, or forehead mirror, the light being accurately focused on the drum; secondly, it affords a magnified view of the drum; thirdly, the object mirror presents a perfect picture of the interior of the ear, and without the necessity of looking through a lens; fourthly, it can be operated in a smaller canal than will admit the speculum; fifthly, the bright reflection of light into your eyes by the glass of the speculum, the black background of which converts the glass into a mirror, can be avoided in the otoscope by the proper and unvarying relations, and the color, of its various parts.

The teaching of otology is much facilitated by means of this instrument in that the instructor may be sure that students are looking upon the field of vision which is being described. Heretofore it has been necessary to bend closely over patients to look through an otoscope while it was being adjusted, then in rising to afford students the opportunity of inspecting the drum, the necessary movements of your body, or of the patient's, would throw the drum out of the field, or darken it, and compel a readjustment of the instrument. These disadvantages made demonstrations uncertain, long and tedious. The object mirror allows the teacher to stand or sit erect by the patient while he takes observations, then by a slight movement of his head only, or by a turn of the mirror, he may allow any number of students to pass in line, each viewing what is being commented upon. If one pays attention to the lighting up of the end of the funnel, as he can do by looking obliquely through the aperture over the

reflector, he may be sure that the drum is illuminated and within sight. This is made practicable by dispensing with the large funnel fixtures that project from the sides of other otoscopes, and that prevent the teacher from knowing whether the drum is illuminated properly or not, except while he is looking through the lens. The advantage of dispensing with the attachment is not diminished in the least by sacrificing any of the brilliancy of illumination. The objection which some physicians have urged against magnifying otoscopes, that they were compelled to look through a lens, is met in this instance, for one needs only to look at a plane mirror to examine the drum and canal. Should it not be desired to use the object mirror, except in demonstration, it can be turned back, or removed by slipping the adjustable ring, to which it is attached, off from the cylinder.

THE PNEUMATIC TREATMENT.

The value of passive motion in the treatment of stiff joints and atrophied tissues is well recognized in general surgery. The application of the same principle to the same conditions in aural surgery is attended with equally beneficial results. But this is a neglected fact, for you rarely see or read of its use in ear treatment. So little has been written upon the subject, as compared with its importance, that no apology is needed for speaking somewhat minutely in respect to the behavior of the drum head and ossicles under such experiments as the following.

In examining and treating the middle ear with the pneumatic otoscope the instrument should be introduced into the auditory canal with the longitudinal axes of both corresponding, just as any otoscope should be placed. If the instrument is correctly adjusted, a slight suction on the rubber tube will cause the little column of air, which lies between the drum and the funnel, to move outward to the air chamber. The examiner is supposed to be inspecting the drum at the same time. If the drum is healthy, he will observe the membrana tympani perform an excursion toward his eye, carrying the handle of the mallet with it, while the triangular light spot changes position as the relative concavity of the membrane changes. Release the column of air and it moves inward again, allowing the drum head, manubrium and light spot to resume their former positions. Press upon the column of air and it moves inward, carrying the membrane and mallet handle with it, causing motion in the joints of the ossicles; the short process projects outward prominently, the light spot changes with the increasing concavity, and the ossicles become more prominently visible as the membrane presses around them. By alternately rarefying and condensing the air in this manner the amount of mobility in the drum head and the chain of bones may be determined under brilliant illumination and magnified inspection. If ankylosis of the

joints of the ossicles, or if bands of adhesions between the bones and the walls of the tympanum exist, the handle of the malleus will be seen to be impeded in its movements, or it may remain fixed, while the membrane about it may be quite flaccid. At this point I wish to anticipate criticism by stating that I have never known any ill effects to follow this line of treatment. If the membrane is greatly thickened in patches, or if it contains calcareous deposits, these portions will be seen to resist the action of the vibrating column of air, while normal parts, and areas of thin cicatricial tissue that indicate the location of former perforations, may respond readily to the experiment. In cases where the drum head is very thick, or where the ossicles are bound down by adhesions to the walls of the tympanum, no perceptible movement may be obtained at first, but decided improvement often follows a persistent use of the pneumatic treatment.

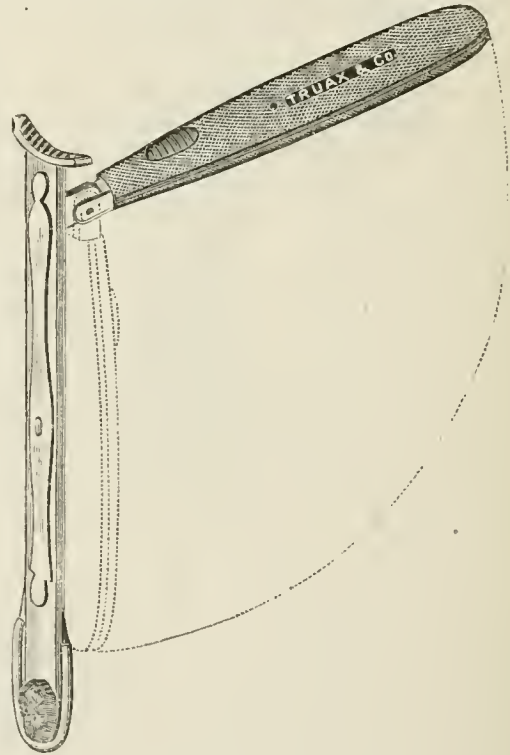
In obstinate cases the progress may be hastened by making pressure directly upon the processus brevis by means of a probe covered with a soft rubber tip. Stiffness in the joints may be overcome in this way so as to facilitate the action of the otoscope. One should press gently on the process until the handle moves, then retract the probe until the malleus resumes its former position, press again, and so repeat the movement several times. Then the pneumatic principle of the otoscope should be applied until one is satisfied that the advantage gained will not be lost. The pressure need not cause pain, but the mallet should be moved until the patient experiences a sensation of movement or of sound. In several patients in whom I have applied passive motion in this manner during the last few months I have increased the hearing-distance for the watch from contact to three, twelve, twenty and thirty-two inches, or one-half the normal distance.

The otoscope may reveal an opaque membrana tympani, so hypertrophied and stiff that it does not yield to the pneumatic treatment. In such a case it is nothing less than a barrier to the admission of sound waves to the perceptive apparatus, and would seem to justify the complete removal of this barrier, when the auditory nerve is not diseased. For if the perceptive apparatus is in condition to do its work, while the conducting apparatus is a hindrance instead of a help, the sooner the obstruction is removed, and sound admitted, the better. It should be understood that this statement is made on the supposition that the condition referred to has proved intractable under the usual treatment. Thus it will be seen that the pneumatic otoscope becomes an indispensable factor in determining the precise condition of an organ so hidden away by nature in a deep recess of the head that any auxiliary to our present helps in diagnosis and treatment ought to be welcome. We are not able without it to judge

intelligently when so delicate and important an operation as resection of the drum head may be necessary as a last resort. And while I am conscious of the strong sentiment of opposition to such operations, I venture to improve this opportunity to urge the occasional necessity and the justifiableness of such an operation, and to invite the most searching criticism of the logic of this procedure.

AN IMPROVED TONSILOTOME.

Any physician who has had a considerable experience in tonsilotomy, with the various tonsilotomes, will not be likely to deny that these instruments are generally too complicated. They are armed with needles, barbs, or sharp-toothed forceps for piercing the tonsil and dragging it through the fenestra before any cutting is done by the blades. A tonsilotome constructed after



the pattern I have made renders the barbs, etc., unnecessary. It reduces the painfulness of the operation by one-half; it divests the procedure of any danger of an accident to the operator or patient; it makes a skilful and easy operation possible with a minimum amount of experience; it resembles a large folding tongue depressor so closely that children usually offer no opposition to its introduction for the removal of the first tonsil; and it combines strength and compactness with simplicity of construction. It is made on the principle of the guillotine, the blade of which is propelled by the thumb of the same hand which

grasps the handle. The latter is set at such an angle to the shaft as will permit the most perfect coördinate action of the muscles of the hand and arm of the operator. All the work may be done with one hand. This advantage is not a small one for two reasons: The powers of coördination and antagonism of muscles are far more perfectly under control in operating an instrument that requires but one hand, than they are when both hands must coöperate; and one hand of the operator is left free to hold the head of the patient, if necessary, as the dentist does in extracting a tooth. The advantages of a tonsilotome that can be operated entirely by one hand are about the same as in a tooth forceps which does not require two hands to manipulate.

I have had two sizes manufactured, the smaller having a fenestra of the calibre ordinarily found in such instruments, the larger supplied with an aperture larger than the largest Mackenzie tonsilotome, while it is so compactly constructed as to require less space in which to operate. I have used the larger size to extirpate enormously hypertrophied tonsils in children as young as two and one-half years, where it was impossible to insert the Mackenzie instrument of the necessary size. The smaller one is sufficient for the majority of cases, but the fenestra is not capacious enough to admit the bases of the extraordinary glands we occasionally see. It is advisable to remove the whole tonsil, and as the tops only of the largest tonsils can be severed with the smaller instruments, it may be better to have the larger size if but one size is to be kept.

The blade is so protected as to make it impossible to wound the ascending pharyngeal, or the internal carotid artery. The shaft that propels the blade is of such width as to make the use of a gag unnecessary, for it protects the finger of the operator from the patient's teeth, if it is placed in the mouth to ascertain when the fenestra is in such position as to embrace the whole tonsil, as it is necessary for one to do when operating in children with other tonsilotomes. Since I have used this guillotine I have not had my finger bitten, while it was not an uncommon occurrence before to come off second best, as far as pain was concerned. With the shank wide enough to afford protection it is unnecessary to introduce the finger into the mouth, for the teeth and lips cannot close enough to prevent the operator from seeing plainly the field of operation. There is no working in the dark, or fear of damaging structures you do not wish to attack.

The handle is firmly fixed to the shank with a hinge-joint and self-acting spring-lock, so that the fenestra can be pressed down around the base of the gland with any degree of power desired. This feature dispenses with any necessity for hooks, forceps, needles, or barbs for spearing the tonsil. The latter being a soft, fleshy mass, adapts itself

to the shape of the fenestra and protrudes through it the instant its base is pressed about. The pair of spearing or tearing the tonsil by toothed or barbed accessories, designed to drag the gland through the fenestra before the blade cuts, excites the most vigorous struggling and resistance on the part of a child. Even when the utmost care has been exercised, the barbs have pierced the soft palate, or the surgeon's finger, instead of the tonsil. Moreover, the gland always comes out with the instrument, the same as though barbs were used. There is another important advantage in having the handle attached to the shank with a hinge provided with an automatic lock, for the cutting extremity of the instrument cannot be thrown out of your control by a disturbance of the coaptation of its parts. The last time I operated with a Mackenzie tonsilotome the child jumped just as I was placing the fenestra about the tonsil. The shank revolved upon the handle, leaving the latter in my hand, while the cutting end was entirely displaced and removed from the vicinity of the gland. It is impossible for this improved tonsilotome to play you such a trick. The handle is made of rubber, knurled so as to afford a firm grip, and it contains a concealed spring-lock operated by a convenient thumb-plate. When this is moved downward the hinge-joint is unlocked, and the instrument folds upon itself like a pocket-knife, occupying the space of about an inch and a quarter in width and thickness by six and one-half inches in length.

Another pertinent point that should not be neglected in this age of antiseptics, is the provision for cleansing and disinfecting the three pieces of which the instrument consists. By raising the proximate end of the horizontal top-spring of the shaft and swinging it 90° to either side, it becomes disengaged from its lock and it liberates the blade from the shank. This arrangement makes it as simple as possible for taking apart, cleansing and putting together again.

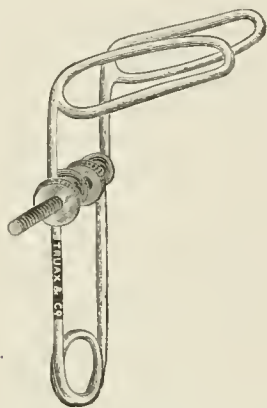
In amputating the apex of a relaxed and elongated uvula the tonsilotome should be used with the handle directed upwards. It should occupy just the reverse position as a uvulotome to the one it occupies when used as a tongue depressor.

Another merit that is not too small to mention is that its simplicity of construction renders it inexpensive.

A NASAL SPECULUM.

The nasal speculum that I have constructed will require but a moment to describe. It is made of spring wire, is self-retaining, and as simple as such a thing can be made. The surfaces that come in contact with the mucous membrane are flattened so as to relieve the pressure of its accompanying discomfort as far as possible. The amount of pressure exerted by expansion can be accurately modified by the counter thumb-screws.

When the speculum is in position, entirely within the vestibule, for examination or operation the handle is directed at such an angle as to be out of the way of the operator. The tendency to slip out of place is overcome by its lightness, and by a nice adjustment of its set-nuts.



A nasal speculum is a disagreeable tool at best, on account of the sensitiveness of the nasal cavities, but this one carries as little discomfort with it as any effective speculum can.

These instruments are manufactured for me by Charles Truax & Co., of Chicago.
719 West Adams Street.

OOPHORECTOMY FOR PROLAPSE OF RIGHT OVARY INTO DOUGLAS' CUL-DE-SAC.

Read before the Medical Society of the District of Columbia, April 18, 1888.

BY J. F. HARTIGAN, M.D.,
OF WASHINGTON, D. C.

This was a very unpromising case. The patient, æt. 36, unmarried, has been under my treatment almost constantly for the past nine years. When she was only a month old her mother died of phthisis. Being a puny, delicate, bottle-fed infant, she was raised with great difficulty. In early childhood she was a subject of chorea.

I was first called to see her in January, 1879, for pleuritis and pneumonia. In the summer of the same year she had intermittent and typhoid fever, the anæmia following leading to ascites and dropsy of pericardium. On account of several attacks of hæmoptysis she went to England in November, 1879, on a visit to relatives, and stayed fifteen months. The trip was partly beneficial, although while away she had three hæmorrhages. Several lighter ones occurred after her return, but with the exception of the occasional coloring of the sputum, none have occurred for five or six years. These hæmorrhages were not vicarious, as they came on without regard to the periods of menstruation; besides, the other symptoms, as

cough, expectoration, etc., pointed to manifest lung disease. About the year 1884 nasal catarrh appeared, associated with endometritis and hyperplasia of the cervix, which would yield to treatment for a while, but return from time to time. Another circumstance in the case, which may be well to mention, occurred last October. After a heavy dinner she said she would have to sit down, complained of a swimming of the head, everything appearing dark before her, and immediately lost her senses and slid off the chair. The servant in her alarm dragged her to bed by the shoulder, dislocating it. This was easily reduced upon the administration of ether, although several weeks elapsed before she had the full use of her arm.

Her first pain in right inguinal region dates back to October, 1886, when, as she states, while riding in a street car she was severely jolted by the car running off the track; pain followed immediately, which subsided the same night, recurring when she walked or rode.

In May last she suffered a severe exacerbation while in Virginia. On my return from abroad last October I found her practically bedridden, with marked evidence of phthisis. Under the use of cod-liver oil and other building-up treatment she improved to a remarkable extent, but still complained of a dull sickening pain in right inguinal region. This was aggravated by any attempt to walk across the room, upon defecation, and before, during or after menstruation. I now for the first time discovered retroversion of the uterus, and on digital examination, prolapse of the right ovary into Douglas' cul-de-sac. How long the latter condition existed I am unable to say, but probably its starting point was in October, 1886, as already mentioned; the symptoms in the interim being mitigated principally by rest in the recumbent position. It is needless to say that all palliatives, such as bromide of potassium, counter-irritation, hot water injections, and endeavor at reposition by the genupectoral method with lint soaked in glycerine, proved of no avail. Even different kinds of pessaries seemed to aggravate rather than relieve her symptoms, so that hypodermic injections of morphia, and by the stomach, became the rule. These would only give temporary relief, however, the effects wearing off in two or three hours.

At last oöphorectomy was proposed as holding out the last chance of relief from her deplorable condition. To this she and her father readily consented. Accordingly on March 31st I performed the operation at Providence Hospital, assisted by Dr. Joseph Taber Johnson, whose kindness and valuable advice I desire here to acknowledge. There were also present Drs. Bulkley, Crook, H. L. E. Johnson and Osmon, Dr. Cole, the House physician, administering the ether. After the usual incision in the median line, not

much difficulty was experienced in reaching the ovary, and separating it from its adhesions behind the cervix. No oozing of the pedicle followed the removal of the organ with the tube, which, in addition to the prolapse, presented a hæmatoma partially organized, apparently involving one-third of its substance, and commencing cystic degeneration. The patient made a fine recovery, chatting and laughing the next day. Only once the temperature reached 100°. On removing the stitches the seventh day not a particle of pus was seen anywhere; everything was perfectly dry, there being primary union along the whole line of incision. She has had no pain whatever since, has menstruated normally, commencing the third day, and although it lasted five days she would not have been conscious of the fact had not the nurse called her attention to the napkins. Her previous sickness was on March 13th. The night following the operation there was some pain in the line of incision, and nausea, but no morphia or medicine of any kind, except for her bowels, has been administered. It is now eighteen days since the operation. She is sitting up without any pain, although for months previously she was confined to bed on this account. Instead of laying awake at night racked with suffering, she sleeps soundly, relishes her food, and, to use her own language, she intends hereafter to enjoy life. I will keep her in the hospital yet, however, for five or six weeks, hoping that all chances of a return of the old lung difficulty will subside.

The results in this case so far are very flattering, and beyond reasonable expectation. It is also interesting from the fact that the displacement was on the right side, about 25 per cent. only into Douglas' cul-de-sac being found in this situation, the large majority of those reported being on the left side, for well known anatomical reasons.

I may add in closing, the satisfaction that any one of the three conditions presented by the specimen, viz., the prolapse, the hæmatoma, and cystic degeneration, fully justified the operation.

ON THE TREATMENT OF LARYNGEAL AND PULMONARY PHTHISIS BY A SPRAY OF HOT VASELINE IN CONJUNCTION WITH MENTHOL AND IODOFORM.

BY HOWARD SMITH, M.D.,
OF CHARLESTOWN, MASS.

For two years the writer has employed a spray of pure hot vaseline, medicated with menthol, iodoform and ol. eucalyptus, singly or in combination, in the treatment of laryngeal and pulmonary phthisis, with results which warrant him in describing the method with some detail and in

asking a trial of it at the hands of other practitioners.

The employment of fluid cosmoline is best avoided; because it is frequently irritating and somewhat gummy, while the translucent, semi-solid product of the Chesebrough Mfg. Co. is pure, unchangeable and perfectly bland.



In order to conveniently warm and spray this vaseline the atomizer figured above was devised, which being charged, is held over a lamp or other source of heat until the contents are thoroughly liquefied and the nozzle has become as warm as can be conveniently borne by the patient, an essential point which is believed to contribute much towards a successful result.

One nostril is then closed by the nozzle of the instrument, and the rubber bulb is worked vigorously during inspiration, by which the spray is drawn deeply into the lungs, as is evidenced by the sensations of the patient and the reappearance of the spray upon the expired breath.

The nasal passages and bronchial tubes being thus coated, the inspired air must, for some time afterwards, be impregnated with any volatile substance with which the vaseline is medicated, and thus the remedy is carried still further along the respiratory tract.

Rosenberg, of Berlin, has obtained excellent results in the diseases mentioned from endotracheal injections of a solution of menthol in olive oil, but the writer considers a warm spray of mentholated vaseline preferable, particularly because the former requires the attendance of the physician twice daily, while the latter can be administered by the patient himself.

He remarks upon the antiseptic properties of menthol, having found it, in a gaseous form, to be destructive to pure cultivations of the tubercle bacillus, and also states that the well known anæsthetic effect of the drug is cumulative; that is, lasting for a longer period after each injection, and enables the patient with laryngeal phthisis to eat at once without pain. (See article by Beehay in *Braithwaite* for July, 1888.) The strength employed by him is 20 per cent., but 1.5 per cent. has been found enough for use in the atomizer by the patient himself.

Iodoform was several years ago much employed in the treatment of pulmonary phthisis, dissolved in ol. terebinth and sprayed by means of the steam atomizer. The results were encouraging, but the combination was extremely disagreeable to patients and attendants. Cod-liver oil is an excel-

lent solvent for iodoform, and when sprayed floats in the atmosphere of a room in a remarkable way; but, upon the whole, pure vaseline is a better menstruum and, with the addition of a few drops of ol. eucalyptus, the odor is quite bearable and the results sometimes more satisfactory than those obtained from menthol. The formula used is as follows:

R. Iodoformi pulv.	grs. x.
Ol. eucalypti.	gtt v.
"Vaseline"	℥ss.
	℥j.

Both menthol and iodoform are antiseptic and anæsthetic, thus fulfilling the two very important indications of allaying cough and modifying expectoration, but in addition have points of difference which will influence the selection of one or the other. Menthol is stimulant to the vascular tissues and promotes absorption, while iodoform possesses valuable alterative properties, hence it is better to select one and keep the other in reserve, as the antiseptic and anæsthetic properties of either are usually sufficient. The addition of cocaine may be necessary in cases of laryngeal phthisis, but one of the other two remedies will usually be found capable of affording, in cases of pulmonary phthisis, great relief from cough, and of diminishing expectoration and improving its character.

Space can hardly be claimed for more elaboration in description of the method of treatment advocated here, and all references to cases may be omitted, as the remedies spoken of have had their respective values determined, the only point which this communication is intended to emphasize being the employment of a spray of hot vaseline as a menstruum.

MEDICAL PROGRESS.

SURGICAL TREATMENT OF SUPPURATING VENEREAL BUBO.—KARL SZADEK thus describes the treatment carried out at the Military Hospital at Kiev:

In beginning bubo, so long as there is no fluctuation, or redness of the skin, simply rest and prevention of irritation or injury to the inguinal region, at the same time appropriate treatment is employed for the soft sore.

If the skin is reddened but fluctuation not well established over the abscess, hot compresses, made with a carbolic solution, are to be applied until there is established complete suppuration of the swelling. Painting with the tincture of iodine does not meet with favor. As soon as fluctuation is made out in the whole abscess and it is ripe, a surgical opening is necessary. A mild degree of chloroform narcosis is recommended, as the necessary steps are very painful. After most careful

cleansing of the skin in the inguinal and genital regions and the thigh, as well with soap, brush and warm water and shaving off the hair of the pubes, the operation field is to be disinfected with a five per cent. carbolic, or a one per cent. sublimate solution. A free opening is then made, in most cases parallel with Poupart's ligament, by means of a small bistoury. The incision must correspond with the length of the bubo. After evacuating the contents any recesses or sinuses are to be separated by means of a pair of scissors and all glands, both those which have suppurated and others which are enlarged, must be removed with the finger, and remnants of glands and firm granulation tissue scraped out with Volkmann's spoon. If an affected gland does not yield, its capsule must be opened with the knife and its contents removed. If the cutaneous covering is destroyed in a large area it is best to cut it away with scissors. It was only necessary in a single case to apply a ligature on account of hæmorrhage. After the bleeding has been stopped with cotton-tampons, the cavity is to be washed out with a corrosive sublimate solution and the whole cavity sprinkled with iodoform alone or mixed with alum, packed with iodoform gauze, and an occlusive dressing applied. The latter consists of a few layers of sublimate gauze and salicylic or sublimate cotton, upon which a mass of jute or tow is placed. The whole is then covered with mackintosh or glazed paper and fixed with turns of a moist, wide dressing bandage.

The first permanent dressing, when well applied and the patient keeps quiet, can remain for from two to five days. If it becomes soaked with the secretions it may have to be changed earlier. In the second dressing the edges of the wound are washed with a five per cent. carbolic or a one per cent. sublimate solution, the wound covered again with iodoform without washing out the cavity or applying tampons, and a fresh dressing applied. This and following dressings can, with few exceptions, be left from five to ten days and changed only if oozing is noticed from the edges. Besides the 274 chancroidal buboes there were treated during five years twenty-six syphilitic buboes, and twelve times the inguinal glands were removed by operation on account of tubercular adenitis. The duration of treatment of chancroidal buboes averaged thirty days. Complications with phlegmon diphtheria. Chancroidal destruction of the walls and edges, etc., were never encountered in the acute or subacute chancroidal buboes. In five cases erysipelas occurred, but it seemed to have little influence on the course of the result as healing always took place. In twelve cases eczema of the neighboring parts came on, delaying healing from ten to twenty days, as the dressing had to be frequently changed. The course of the opened suppurating syphilitic buboes, which were usually not scraped out but had

the glands respected, was usually favorable and no complications occurred. In tuberculous adenitis the wounds healed kindly and for the most part quickly when the individual was strong and otherwise healthy, after extensive scraping out and extirpation of the glands. In anæmic and broken down patients, the healing was slower. Although iodoform was employed in large quantities, intoxication from it was never witnessed. In all the varieties the scar was as a rule smooth, even often linear, and after a time scarcely noticeable.—*Journal of Cutaneous and Genito-Urinary Diseases*, September, 1888.

CARDIAC HYPERTROPHY WITH VARIABLE MURMURS; PROBABLE OCCLUSION OF THE THORACIC AORTA.—The following case came under the care of SIR HUGH BEEVOR and DR. DUFFIN, at King's College Hospital, London:

W. B., æt. 24, was admitted into the hospital complaining of pain in the right side, with a temperature of 100°. These symptoms left him after a few days. He was a soldier. He had previously had very good health but, after two years' service, was discharged invalided. Through the kindness of the medical department at the Horse Guards, his health-sheet was obtained, where he is described, on enlistment, as a laborer with good physical development. He was sent to India, where he was in hospital on four occasions for diarrhoea and dysentery, spending 120 days out of 15 months in hospital; he was then sent home to Netley and, after 14 weeks, discharged for heart disease. Habits intemperate. His brothers and sisters are alive and healthy; the father and mother died of tumor. The chest showed a fulness below the right axilla, and strong pulsation could be felt there, and be traced up into the axilla; on the back large arteries could be traced on either side, from the level of the first dorsal vertebræ down to the sixth and fifth on right and left side; and corresponding to the pulsation in the right axilla, a pulsation was felt in the left; the arteries ran down to the ninth and eighth intercostal spaces respectively. The right subclavian was larger than the left; an artery was felt under the right costal cartilages, near the sternum. In the abdomen, the abdominal aorta could not be felt pulsating, only the right external iliac; in the lower limbs the femoral arteries could not be felt pulsating, only the right posterior tibial artery. The pulse at the wrist was 100, high tension, and the artery large; there was also marked pulsation to be felt behind the manubrium sterni. There was visible præcordial pulsation in the fourth and fifth interspaces, but the apex beat was felt most in the sixth, at the nipple line; præcordial dulness was increased. On auscultation, three distinct areas of systolic murmur were noted; at the base, to the right of the sternum, in the second and third interspaces, and to the left in the second and all

the first interspace; below, a systolic murmur was heard over the area of cardiac dulness, and across the sternum to the right costal cartilages. The character of the murmur was different at base and below; at the base, on the right, it was very whizzing in character, and in time came just before the second sound; below, on the left, it resembled an exocardial murmur; on the right it was louder, and of a different character. He was examined at different times over a period of nine months; on some occasions there was no murmur at all at the base, and a limitation of the usual area was frequent, which was shown on the chest by the double contour of the areas marked.

In this case it seemed that the posterior scapular, the subscapular, and the internal mammary arteries had taken the chief part in forming anastomoses between the arch of the aorta and the aorta in the thorax, with the effect of almost obliterating all pulse in the arteries of the lower extremities. No other effect was noted, with, perhaps, the exception of signs of high blood pressure in the renal arteries, the urine being pale and of low specific gravity, with no albumen, and he said it was customary with him to rise once or twice at night to pass water. There seemed to be no evidence, on auscultation, by which the murmurs could be assigned to arterial anastomoses solely, though one area extended down over the cartilages, beneath which an artery could be felt; on the other hand, he said he had been laid up since leaving the army, a week at a time, with severe præcordial pain, and in the fifth interspace the murmur was similar to exocardial murmurs.

This anomalous case could readily escape observation in an ordinary examination; for unless the stethoscope was placed over one of the arteries in the back, there was nothing but the fulness inside the right axilla to cause special attention. Though his heart was carefully examined for some days after admission, it was the fulness and slightly diminished resonance being investigated that called attention to the anastomoses.—*Brit. Med. Jour.*, August 4, 1888.

TREATMENT OF FRACTURE OF THE PATELLA BY SUTURE.—DR. A. R. JENKINS, of Henderson, Ky., proposes to put the skin on the greatest stretch and to cut down on the fragments by a transverse incision—whether the skin be drawn up or down depending on the amount of separation of the upper fragment. Naturally the incision would be made above if there was much retraction; or if there be much contusion of tissue on or below the bone, the incision is made above in the sound tissue. Through either of these openings the fragments could be freed alternately, and inspected, then sawn, drilled or sutured as might be; or an hæmarthron or fluids could here be removed from the joint, the capsular ligament sewn, etc. An assistant, in the meantime, keeps

the skin stretched as necessary, either with fingers, retractors, or Muzeaux forceps. Of course the strictest antiseptic prophylaxis and treatment should attend throughout.

In cases of compound fracture of the patella, with much destruction or pulping of the skin, it is suggested that the doubtful tissue be excised, and that the sound skin be drawn over the fragments. Compensation for the resected skin could be obtained by incising a large Y or an arc above or below the resection wound and far enough removed to be safe, the concavity of the arc or the fork of the Y looking towards the wound, or by a tenotomy of the tensor vaginæ femoris muscle.

Furthermore, it can be said for this method that it would allow of the extra-articular methods of suture, as employed by Volkmann and Riedel, or the intra-articular fastening of Kocher. Either of these methods could be used after the toilet of the patella was complete; all that is then necessary after the skin is relaxed, and the parts *in statu quo ante*, is to make a counter opening at the opposite end of the patella, and from these two openings the catgut or silver could be manipulated by an armed needle around or beneath the patella (subcutaneous or subpatellar). In laying the last stitches in closing the cutaneous wound as a refinement of technique, wounding of the skin could be avoided by the continuous sunk-en catgut stitch, thus eliminating infection through the skin appendages.

The particular claims for the method are that it admits of an almost subcutaneous exploration and operation on the diastasis and in the joint, and that it may even progress like the ideal subcutaneous wound to healing. It involves normal and less suspicious tissues. It is consistent to true plastic surgery, and to the anatomy and physiology of the parts involved. By making a proper use of the elasticity of the skin in this situation, the wound in most cases need be but small for the field of inspection and operation, owing to elasticity of the skin, can be moved from one part to another without the necessity of essentially enlarging the original cut. In this it resembles the laparotomy technique of Lawson Tait, in so far that it is an endeavor to bring the entrance operation wound to the *minimum*.—*Annals of Surg.*, September, 1888.

MERCURIC BICHLORIDE IN HYPOPYON KERATITIS AND OTHER CORNEAL DISEASES.—DR. R. H. CHILTON says:

In the application of this remedy to eyes with hypopyon, I do not think it necessary to keep the eyes in constant contact with a solution of it, but think a thorough application to the eyeball, by inversion of the lid, two or three times a day by the physician, then direct the patient to use it every three hours, is sufficient. The result is generally about the same—that is, to check

sloughing and suppuration within twenty-four hours. I agree with Dr. Hotz in believing the resulting cicatrix in these cases to be much less than when treated by other remedies. In all cases where sloughing has occurred to the extent of perforation, or where it is necessary to make a paracentesis, I think it is advisable to wash out the anterior chamber with a weak solution, the strength to be about 1 to 20,000. This will prevent a further invasion of the disease into the chamber, and often prevent disease of the iris from complicating the already serious trouble. Any ulcerated surface, without secretion of recent occurrence, will soon heal, and we obtain this condition perfectly by the use of mercuric bichloride.

In the treatment of a recent case of gonorrhœal ophthalmia, I was pleased, not only with its action in at once arresting the progress of a sloughing ulcer in one eye, but in aborting the disease in the other. In the latter, the treatment was begun before the disease had involved the whole of the surface of the conjunctiva, yet suppuration was abundant from the lower palpebral membrane. The disease succumbed in three or four days. In the sloughing eye the disease never progressed after the first twelve hours, and the suppuration was materially checked from the lids at the same time.

The use of this preparation is well borne in hypopyon keratitis; I have thought better than in eyes without ulceration. It is applicable in nearly all cases, while preparations of mercury in the form of an ointment are totally inadmissible from their irritating effect. I have never had occasion to make a paracentesis when I could get the eye fully under the influence of this drug before the accumulation of pus took place. In its application I use a $\frac{1}{2}$ per cent. solution of cocaine to modify its stimulating action. In other forms of corneal ulcer I have found it superior to other preparations of mercury. In ulcerative keratitis, phlyctenular disease, and corneal ulcer from granular inflammation, I have found it equally as beneficial as in hypopyon.—*Texas Courier-Record of Medicine*, August, 1888.

SALICYLATE OF BISMUTH, combining the astringent properties of bismuth and the disinfecting properties of salicylic acid, has been used by EHRLING in a large number of cases of digestive disturbance in children. It is an excellent remedy for gastro-intestinal catarrhs depending on abnormal fermentation, especially if it be administered in conjunction with lavage (washing out of the stomach and intestines). Ehrling uses the following formula:

Salicylate of bismuth	5 j
Glycerine	$\frac{3}{4}$ ss
Water, ad.	$\frac{3}{4}$ iv ʒ

S.—A drachm, more or less according to age, every two hours.—*Archiv für Kinderheilkunde*, Bd. ix, S. 90.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dugglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, SEPTEMBER 22, 1888.

CLASSIFICATION OF DISEASES BY COMPARATIVE NOSOLOGY.

It was in every way appropriate that the admirable address of Dr. Gairdner before the British Medical Association should have been followed by the Address in Medicine of DR. T. CLIFFORD ALLBUTT, on "The Classification of Diseases by Means of Comparative Nosology." Reading this after the address of Dr. Gairdner, one is inclined to think at times that Dr. Allbutt's address is a first chapter after Dr. Gairdner's masterly introduction—a rather special application of the general principles laid down in the President's Address. It was such an address as could be written only by a physician-naturalist—a *Naturforscher*. The keystone may be said to be evolution—as applied to disease, and one who reads it will do well to read Mr. Pittfield Mitchell's recent work on "Dissolution and Evolution and the Science of Medicine."

What is meant by "the classification of diseases by means of comparative nosology?" To classify things is to think of them in groups, these groups being in such order as best conduces to the ascertainment and remembrance of their laws. Scientific classification, then, must be founded on a natural method and on natural affinities, and must be the expression of them. We are all familiar with chemical classification, the groups and series, which may be regarded as the simplest classification of substances apparently unlike in

some or many particulars. Passing to the animal world, who, in making an artificial and unscientific classification, would place the kangaroo and the opossum in the same class, and who, in the same classification, would not class together the flying-squirrel and the flying-squirrel-like marsupial of New South Wales? "A scientific classification," said Dr. Allbutt more than twenty years ago, "disregards the obvious as such, and may place together objects at first sight distant and disparate." We should not think of diseases as isolated disturbances, but that many of them are phases of certain periods of bodily development.

In his article on the "Classification of Disease," in the second volume of Guy's Hospital Reports, Dr. Allbutt said: Life consists of a series of processes which together constitute varieties or modes of growth, that is, health, scrofula, syphilis, rheumatism, gout, rickets, tuberculosis, etc. Diseases, taken severally, are often members of such series, which series may be constructed by a survey, not only of the individual, but of his collateral kin and of his ancestry, and also of other orders of the animal and vegetable world, a survey which cannot be made until comparative nosology becomes a recognized branch of our science." And again, in an address in 1882, Dr. Allbutt said: "To find new arms against disease, we must have a truer conception than we mostly have of the genesis of disease. No mere enumeration of symptoms or of pathological detail will suffice for this, nor even a full description of diseases severally. We have to work out the genetic affinities of diseases, their origins, parent stems, and alliances, as well as their issues. We can have no complete therapeutics until the science of comparative nosology is in a great measure constructed—a science as yet scarcely begun." Thus we see that the address now under discussion is the outgrowth of almost a quarter of a century of thought. In this time something has been done in the ways he indicates. About a quarter of a century ago, in 1864, Dr. Laycock showed that some basis of organic classification of disease was to be sought in a comparison of diseases as they originate in the several layers of the embryo, and his suggestion has thrown a great deal of light upon the kinship and genesis of neoplasms. Veterinary science has given and will give new light, but it will advance us only a step. In human nosology but little remains, and when we shall

have all that veterinary nosology can give we will have but two links in the zoocentric or biocentric chain. Perhaps to complete it we must wait patiently for some Darwin, "a machine for grinding general laws out of large collections of facts."

"Perhaps," says Dr. Laycock, "no morbid change happens to man which is not a normal process in other organisms, and the nature of which may be known by a study of such analogous normal changes." An example of this, says Dr. Allbutt, is the shedding antler of the deer, which is a huge sequestrum, a case of normal necrosis. We are in the position, he says, of anatomists before the time of Cuvier and von Baer. A minute clinical study of human nosology has been made, but the parts into which disease has been dissected are not the elements out of which it has grown. Nearly all remains to be done in tracing the homologies of disease throughout the animal and vegetable world. Its phenomena must be studied under the various and simpler conditions of lower organisms, and its development traced upwards through the macrocosm of all life and through the microcosm of the embryo. Its variations through space and under changed climatic conditions must be studied, and the effects of change of function upon change of structure must be noted as these changes pass, by hereditary transmission, from the dynamic to the static form, tabulating pathological sequences in family, race or country, so as to detect the latent affinities of diseases apparently not related. As an introductory to this study may be recommended Quatrefages' work on "The Human Species."

Dr. Allbutt then describes the four methods, the *hereditary*, the *historical*, the *geographical* and the *experimental*, that must be pursued in order to attain to a true system of classification of diseases of men, animals, and plants, on a basis of affinity. These methods must be pursued at the same time; they cannot be logically dissociated. We are, as it were, scarcely at the threshold of any one of these methods, as Clodd says of the significance of the doctrine of heredity. How little does any one of us know of his family history, even in the male line, for a comparatively short time, and how infinitely small the knowledge of the vast expansion backwards of the family tree. Yet for complete knowledge the hereditary nosology of a whole nation is inadequate; we must go

with our inquiries into the diseases of all living things. As in all studies, the historical method in nosology leads to the philosophical, and here we may be said to be in the glacial period of our knowledge. How do changes of function become, in generations, changes of structure, variations into less useful or "morbid" function, and this soonest in the highest and least organized parts, the nervous system, the adapter and organizer? We know only the fact, not the *how* and *why*.

And after having carefully studied, so far as we can, the heredity and history of disease, and turn to the geographical method for information, we are brought face to face with the question, How have the morbid varieties of *man* arisen? For the answer to this, which is only a part of the question, How have the morbid varieties of living things arisen? we must seek the answer in the past. We must work in areas long undisturbed, says Dr. Allbutt, and must register in these the phenomena of morbid variation with the qualities of soil, aspect, seasons, atmosphere, food products, and so forth. Nations must not be confounded with races, nor kingdoms with physiological areas. Said Boudin: "As every country has its characteristic vegetable kingdom and animal kingdom, so it has its pathological kingdom." As illustrating the fact that no one of the methods of classification spoken of can be relied upon for complete nosological data, may be mentioned malformations of the jaws, which are becoming more common in America, especially in those portions of the continent peopled by several different races. And to show the value of comparative nosology, in clearing up this one matter we must get a part of the answer from the *niata* cattle of South America; a part from certain sheep of Central Asia, which have, normally, steatopygia; a part from the difference between the head of the domestic pig and the wild boar, and so on until the whole world has been sought over; and even then human craniology must be studied to complete the evidence.

Finally, with the other methods, there is the experimental. Like the other methods, the experimental shows that clinical types cannot be a basis of nosological classification. The work being done in experimental medicine is increasing, and is certainly productive of interesting results. Pharmacological experiment has shown that poisons vary in their clinical effects by leaps and bounds,

as musical flames respond to scales of vibration; that poisoning by extractives in general is attended by hyperthermia, and poisoning by animal alkaloids by hypothermia; that the distinctive action of the lower members of the fatty series is their stimulant and anæsthetic action on the nerve centres, and that the members of the aromatic series affect the nervous system, but the motor more than the sensory centres. With curare we may reduce the mammal to a cold-blooded animal, whose temperature varies with the atmosphere. Space does not permit the further pursuance of this subject.

HOW THE OPIUM HABIT IS ACQUIRED.

MR. VIRGIL G. EATON tells the public, in the September number of the *Popular Science Monthly*, how the opium habit is acquired. He is the writer that frightened the people of the country about two years ago by prophesying that they would all be bald in about a dozen centuries. He now predicts that unless people develop their muscles, rest their nerves, and send the family doctor on a vacation, the residents of our American cities will be all opium-slaves.

For the past year or more Mr. Eaton has "studied the growth of the opium-habit in Boston." He says it is increasing rapidly, and from the "tell-tale pallor" of the faces he sees he is sure the habit is claiming more slaves every day. In order to approximate to the amount of opium in its various forms used in Boston, Mr. Eaton "made a thorough scrutiny of the physicians' recipes left at the drug-stores to be filled." This is the way that one would expect an unscientific and unthinking man to make such an investigation. Having set out to find a thing, he finds it—and is duly surprised. He says he found opium and its alkaloids used by physicians for every ailment that the flesh is heir to, and then he enumerates a list of affections for which he learned they are used. It is pertinent to inquire whether Boston physicians are in the habit of writing out a diagnosis on each prescription. One would infer as much from Mr. Eaton's article. From his investigations as to the number of prescriptions containing morphine, and the number of these refilled, he is satisfied that it was the opiate qualities of the medicine that caused the renewal. As regards the proportion of

opium habitués that begin by taking medicines containing opiates, he places it as fully 25 per cent.—perhaps more. This is only one in four, on his own estimate. Then, within the space of a page he says: "The parties who are responsible for the increase of the habit are the physicians who give the prescriptions." Now if only one opium habitué in four acquired his habit from medicines ordered by a physician, the other three must have acquired it in some other way, not attributable to the act of a physician. How, then, can the physician be responsible for the increase of the habit, even admitting that they are responsible for one case in four?

Mr. Eaton also tells how physicians prescribe opium. "In these days of great mental strain, when men take their business home with them and think of it from waking to sleeping, the nerves are the first to feel the effects of over-work. Opium effects immediate relief, and the doctors, knowing this, and wishing to stand well with their patients, prescribe it more and more. Their design is to effect a cure." This arrant nonsense in the *Popular Science Monthly*! Mr. Eaton says that two means of preventing the spread of the habit suggest themselves to every thoughtful person: The *first* is to pass a law that no prescription containing opium or its preparations can be filled more than once without having the physician renew it. If this and the registration safeguards were not enough, Mr. Eaton suggests that physicians could be fined for administering opiates save in exceptional cases. The *second*, is to keep the body in such a state that it will not require sedatives or stimulants. People, he says, should forsake medicine and take to the gymnasium, and thus the family doctor, who means well, but cannot resist the tendencies of the age, can take a protracted vacation. All of which is doubtless well meant.

Had Mr. Eaton taken the trouble or known how to make more careful investigation of the subject about which he has succeeded in confusing himself, he would have consulted some of the back numbers of the *Boston Journal of Health*, with the assistance of which he might have written an article at once sensible and interesting. Had he stopped to consider that one-fourth of a class is less than three-fourths, he would not have written an article that can have no other effect than to mislead the public. He but barely men-

tions the fact that the proprietary or "patent" medicines that have the largest sales are "those containing opiates." He also mentions that opium joints and opium-smoking are on the increase. He says nothing of the fact that "nervines," and such compounds as "Scotch Oats Essence" contain opium, and probably he does not know that of the twenty or more varieties of "opium cures" made and for sale in this country, *all contain opium* except one, as shown by the analyses of Dr. B. F. Davenport, of Mr. Eaton's own City—Boston. Mr. Eaton takes no account of the fact that the "patent" medicines of the worst grade are the most popular, and their popularity depends on the amount of alcohol or morphine they contain.

Mr. Eaton's paper reminds one of the assertion that a large proportion of habitual and occasional inebriates owe their disease to the alcohol that physicians have prescribed. This assertion has been recently made by a prominent clergyman, whose name may be found among the endorsers of a "patent" compound that contains more alcohol than pure sherry. He thunders from the pulpits against the use of alcoholic liquors in any and every form, and writes an endorsement for a "pure, non-alcoholic tonic" that contains 29 per cent. of alcohol. Totally blinded by the beam in his own eye, he lectures his brethren on the motes in their eyes. The medical profession, we have no doubt, will endorse Mr. Eaton's proposition to fine physicians for prescribing opium when it is not needed, if he will accept an amendment: Fine druggists and others that sell "patent" medicines containing opium or its preparations or alcohol, or any substance dangerous to health or of no value in the treatment of disease, or that are not worth their price; and incarcerate the manufacturers in State's prison for not less than five years, along with the people that endorse their preparations, knowing nothing of them. This done, Mr. Eaton will probably find that physicians are not responsible for the increase of the opium-habit.

INTUBATION AND DEGLUTITION.

It is well known to all who have given attention to the subject, that one of the greatest difficulties attending intubation of the larynx as a substitute for tracheotomy, is the tendency of food

and drink to enter the larynx through the tube, rendering it, in some cases, impracticable to administer sufficient nourishment to sustain the patient. At the regular meeting of the Chicago Medical Society, September 3, 1888, Professor Wm. E. Casselberry read a short paper embracing an account of three cases of intubation of the larynx that had come under his observation, in which he had succeeded in administering water, milk, and other liquid nourishment abundantly, by simply placing the patient in the dorsal position, with the head and shoulders inclined downwards at least sixty degrees, and letting them take the liquid through a tube. While inclined in that position, the patients swallowed with ease and without the slightest tendency to pass any part of the liquid into the larynx. His first case was attended with Dr. Frank Carey about June 1, 1888. Since hearing of the good results obtained in this case, several other members of the Society had tried the same method with equal success. In none of the cases thus far reported, has the great inclination of the head and shoulders downward, created any tendency to displace the tube, or to cause undue congestion of the vessels of the brain. Professor Casselberry stated, in closing the discussion, that the patient should not be raised to a horizontal or upright position too quick after stopping the food or drink lest there might be remaining in the mouth or fauces enough to gravitate through the tube in the larynx and occasion coughing at once. He said to obviate this it was necessary to induce the patient to perform the act of deglutition two or three times after taking away the nourishment or drink and before allowing the head to be elevated.

YELLOW FEVER IN FLORIDA.

The yellow fever that manifested itself to a limited extent in two or three places in Florida last year, has renewed its invasion the present season, and assumed an important epidemic form in Jacksonville and some smaller places. The whole number of cases reported as having occurred in Jacksonville to this date, September 17, is 1047, and the number of deaths, 133, which indicates a mild type of the disease. Liberal contributions are being made in aid of the suffering communities; and this should be continued, especially by the people of the North, until the

plague ceases. If the Health Boards and afflicted municipalities are supplied with sufficient means, not only provisions, but plenty of nurses and doctors can be had from the South, who are already acclimated and familiar with the scourge. But experience has abundantly demonstrated that such nurses and doctors as go from the North wholly unacclimated, directly into the fever locality, almost certainly speedily succumb to the disease, and thereby become an additional burden instead of a help to the afflicted communities.

EDITORIAL NOTES.

A CONGRESS of Polish medical men and scientists was held recently at Lemberg. About 500 members were present.

ALUM IN FURUNCLES OF THE EAR.—Grash reports good results from alum solutions in furuncles in and about the ear.

RAILWAY SANITARY INSPECTION.—Those interested in this field will do well to read the paper of DR. R. HARVEY REED, of Mansfield, Ohio, on "The Sanitary Inspection of Passenger Coaches," read at the Ninth International Congress, and now reprinted in a brochure.

LEAD-POISONING has become less frequent in the Department of the Seine, the hygienic measures enforced for several years having diminished the number of cases. The Committee on Public Hygiene recommend that powdered white lead be replaced by white lead mixed with oil, which is not dangerous.

ABSENCE OF BOTH MAMMÆ in a female, aged 21 years, is recorded by DR. W. WYLIE, of Skipton, England. A small mole exists near where the right nipple should be found, and the pectoral muscle seems to be quite bare of adipose tissue in that region. Some three months ago the woman gave birth to a child, and there has been no sympathetic pain nor uneasiness of any kind in the pectoral region.

MEASURES AGAINST SMALLPOX.—The Comité Consultatif d'Hygiène Publique de France, after hearing the report of Dr. Roux in regard to the epidemic in the Department of Morbihan, made the following recommendations: Isolation of patients; disinfection of linen, mattresses, and

clothes by means of portable steam stoves; the use of sulphuric acid and antiseptic sprays in the dwellings; vaccination of all the inhabitants with animal vaccine; and special instruction promulgated by means of cards.

SPECIALISM IN FRANCE.—The Council of the Faculty of Medicine of Paris has approved the report of Dr. Damaschino, who urges that three *agrégés* (assistant professors) out of five should be required to take up specialties immediately on their *agrégation*, and thus official sanction has been given to specialties, in France at least. The specialties to be chosen comprise ophthalmology, experimental and comparative pathology, hygiene, forensic medicine, mental diseases, and cutaneous diseases and syphilitic disorders. Therapeutics, nervous diseases, and diseases of children will be added to the list subsequently.

SUIT AGAINST DR. VANDERPOELE.—Dr. Samuel C. Vanderpoele, Jr., of New York, has a singular lawsuit against him. Three weeks ago he diagnosed the illness of a little daughter of Charles Dawson, of Syracuse, N. Y., who was spending some time with his family at the Larkins House, Watch Hill, L. I., as scarlet fever. Mr. Larkins, the proprietor, relying on the diagnosis of another physician, denied that the child was suffering from the disease, and the Dawson family remained at the hotel. The other guests, hearing of Dr. Vanderpoele's diagnosis, left the place. Mr. Larkins immediately brought suit in Rhode Island against Dr. Vanderpoele for \$12,000 damages. Dr. Vanderpoele says that his diagnosis was correct and that he has been sustained by the Board of Health of Westerly, R. I., and some prominent physicians. Dr. Vanderpoele intends fighting the suit. He says he was subjected to great personal inconvenience by the action of Mr. Larkins, who, as soon as he brought the suit, had an order issued for Dr. Vanderpoele's arrest. The Sheriff arrived at the Watch Hill House, a rival establishment, where the physician was staying, and proceeded to execute the order. Bail was fixed at a large figure, but several of the cottagers offered at once to go on the doctor's bond. The Sheriff, however, Dr. Vanderpoele says, made paltry objections to each of them, and stated that he intended to lock the doctor up, but satisfactory bail was finally furnished. Dr. Vanderpoele says he will in turn sue the hotel man for damages.

SOCIETY PROCEEDINGS.

Congress of American Physicians and Surgeons.

THE PRESIDENT'S ADDRESS.

Delivered at Washington, D. C., September 20, 1888.

ON MEDICAL MUSEUMS, WITH SPECIAL REFERENCE TO THE ARMY MEDICAL MUSEUM AT WASHINGTON.

BY JOHN S. BILLINGS, M.D.,
SURGEON, U. S. A.

Through the kindness of Dr. J. S. Billings, we have received an advanced copy of his Address. After some introductory paragraphs he speaks of the origin of Museums as follows :

The origin of collections of objects of natural history was possibly, as suggested by Beckman, the custom of keeping curious objects in temples; but we have no record of the formation of any collections, specially connected with anatomy or medicine before the sixteenth century. It is true that the human anatomy had been introduced into the schools by Mundinus in 1306, and that do doubt in Bologna, in Paris, and a few other places, a skeleton or two was preserved for purposes of instruction; but alcohol was unknown as a preservative before the end of the fifteenth century, anatomical details were of no interest until Vesalius had stirred up controversy with the Galenists, and injected preparations were not thought of until after Harvey's announcement, in 1628, of the discovery of the circulation of the blood.¹

The introduction of the use of the microscope at the beginning of the seventeenth century, and the collections of preparations for use with this instrument made by Leeuwenhoek and Ruysch, gave a powerful stimulus to formations of museums of this kind. The most famous of these collections was that of Ruysch, purchased in 1717 by Peter the Great, and sent to St. Petersburg. Ruysch was practically the first to prepare injected anatomical specimens for permanent preservation, and, if the stories told of his work are true, he made preparations which have never been surpassed. His museum was a very ornamental one, the bones and skeletons being arranged in various devices, the plants in bouquets, while scattered through the whole were beautifully engrossed sentences from the Latin poets.

¹ For accounts of the collections formed between the days of King Solomon, and the end of the seventeenth century, consult tome ii of the *Musei Museumum* of Michael Bernhard Valentin, in folio, published at Frankfurt in 1714, wherein are curious engravings of many of the wonders contained in these museums. See, also, Hagen (H. A.), *The history of the origin and development of museums*, American Naturalist, 1876, x, p. 80.

² The first use of wax models to represent pathological specimens or dissected preparations of parts of the human body is attributed to a Sicilian priest, Gaetan Jules Zambo, who lived in the latter part of the seventeenth century, and who had been accustomed to make wax models of diseased or deformed hands, feet,

The most famous medical museum in the latter half of the eighteenth century was that founded by Fontana, at Florence. This still exists, filling a series of rooms, and consists mainly of wax preparations, beautiful to look at, but inaccurate, and of little scientific value.²

During the first half of the present century a number of private collections were formed by anatomists, pathologists and surgeons. Most of these have become public collections, either by gift or purchase, and the rest have been dispersed or destroyed. There is not in existence, at the present time, any large collection of specimens pertaining to human pathology which is the property of an individual, and is at all comparable to those made by John or William Hunter, Astley Cooper, Howship, Liston or others. Commenting on this fact, Sir James Paget writes me that he does not know of any large private pathological collection, and that he believes the change to be entirely for the better.

The necessities of modern progress in anatomy, physiology and pathology, have led to the creation of medical museums in all parts of the civilized world. In most of the Continental capitals, these are connected with universities supported by the State. In Great Britain and in this country they are, as a rule, connected with private or semi-private institutions for medical teaching. This difference is connected with the relative position which medicine holds in the educational machinery of the State in different countries. Where medical education is furnished by institutions directly supported by the government, the museums, which are a part of the apparatus required, are, of course, also supported by the government.

Through the aid of friends, whose kindness in replying, or in obtaining replies, to somewhat troublesome inquiries, I cannot sufficiently acknowledge, I have obtained certain data with regard to some of the most important medical museums now existing in the world, and a part of these data are summarized in the table before you.³ Evidently the city having the most valuable aggregate of anatomical and pathological specimens at the present time, is London, which contains the collections of the Royal College of Surgeons, of St. Thomas', Guy's, St. Bartholomew's, St. George's and of other hospitals, and of University College, the College of Physicians and others. The oldest public anatomical museum in London is probably that of St. Bartholomew's, which, in 1826, had a room set apart for the purpose under

etc., to be used as *ex voto* offerings at the shrines of certain saints. The fame of these induced a Florentine surgeon, Ricci, to visit the priest, and to get him to model some pathological specimens which he furnished. A Franciscan, named Desroches, brought this art to France, and made many such models between the years 1703-1706, and Bianchi formed a large collection of the same kind in Italy. It was scattered after his death, and the last vestiges of it were two models representing a healthy and a diseased liver, which were to be seen in Innsbruck in 1766. (Percy et Laurent, in *Diet. des Sci. Méd.*, Paris, 1818, vol. xxxv, article "Museum.")

³ See appendix.

the charge of John Freke, and which received the private collection of Abernethy. The most important medical museum in the world, and the one which has exercised the greatest influence in giving direction to anatomical and pathological studies, and in serving as a model for the formation of other collections, is undoubtedly that of the Royal College of Surgeons of London, the foundation of which was the collection made by John Hunter, purchased by the government in 1799. In one sense it is not a government institution, the funds from which it is now supported not coming directly from government grants; but, in another sense, it is truly such, since the College may be looked upon as the agent of the government, having special charge of matters connected with medical education, as it is the principal examining body for those proposing to practice surgery in Great Britain.

The great value of the Hunterian collection lies in the breadth of its scope, which includes every branch of medical science; but it is preëminent in illustrations of human morphology and its abnormalities. The museums of the great hospital medical schools are relatively richer in the department of pathological anatomy, specimens of which they have greater facilities for obtaining. Among these there is, of course, a certain amount of duplication of matters of interest; but no two pathological specimens are precisely alike, and the question discussed in the Paris school one hundred and fifty years ago, viz: "*An pro distinctis ægris ægritudines diversæ?*" is one that often occurs to a curator as he examines new specimens which differ but little from those already in his collection, but which do differ in some respects, and with regard to which he must decide as to whether, upon the whole, they are worth the trouble and cost of preservation.

Edinburgh and Dublin have also each large and valuable collections pertaining to anatomy and medicine.* In Paris the medical museums are those of the Faculty of Medicine, including the Musée Dupuytren, devoted to pathological anatomy, and the Musée Orfila, devoted to human and comparative anatomy, *materia medica*, natural history and instruments and apparatus.

Professor Leon Le Fort, to whom I am indebted for data with regard to these collections, remarks that a large proportion of the anatomical specimens of the Orfila museum come from candidates who take part in concours opened for positions connected with the anatomical teaching of the faculty—such as prosectors, demonstrators, etc., each candidate being required to furnish from ten to thirty specimens.

*I am indebted to Sir James Paget for the information given with regard to the greater number of the British museums. I had originally intended to attempt to obtain such data only from four or five of the largest; but on sending my little list of questions to Sir James he took such a kindly interest in the matter as to send a copy of these queries to a number of other museums with the request that they might be answered.

The medical museums of other European countries are connected as a rule with universities, and it is to be remembered that in these the different branches of medical instruction are each both more specialized and more comprehensive than is the rule with us. The professor of anatomy, of physiology, of pathology, has each his own building or institute, and therefore, each his own museum; and unless this fact be held in view, comparisons between Continental and English, or American, medical collections may give very erroneous results.

So far as mere number of specimens is concerned our own national medical collection is one of the eight largest in the world, and is increasing more rapidly than any other.

This collection, known as the Army Medical Museum, owes its inception to Dr. Wm. A. Hammond, one of whose first acts after becoming Surgeon-General, 1862, was to issue a circular stating that "as it is proposed to establish in Washington an Army Medical Museum, medical officers are directed diligently to collect and to forward to the office of the Surgeon-General, all specimens of morbid anatomy, surgical or medical, which may be regarded as valuable; together with projectiles and foreign bodies removed, and such other matters as may prove of interest in the study of military medicine and surgery."⁵ By the end of the year over a thousand specimens had been collected, and the catalogue printed in 1866 showed that it contained 7716 specimens. It is not my purpose in this address to trace the history of its development; that must be done elsewhere. It has recently been placed, with the Library, in a conveniently arranged fire-proof building, and on the first of July last contained over 15,000 specimens besides those contained in its microscopical department, divided as follows:

Comparative Anatomy	1,689
Pathological	8,354
Medals	384
Microscopical specimens	10,416
Normal Human Anatomy	2,961
Instruments and Apparatus	814
Microscopes	141
Miscellaneous	835

Besides these there are 375 specimens pertaining to normal human anatomy and 726 to pathological anatomy, which are in what is called the provisional series.

It is not, however, by number of specimens that the importance and value of museums of this kind can be judged; and in this case such a comparison would give an exaggerated and erroneous idea of the value of this collection. My object in this address is not to boast of what we have, but to indicate what we want; to point out what a National Medical Museum, arranged to meet the

⁵Circular No. 2, Surgeon-General's Office, Washington, D. C., May 21, 1862.

wants and interests of this country, should be, should have, and should do, and to suggest some of the ways in which this is to be brought about.

After commenting somewhat in detail upon the ways and means for making the museum what it should be the author continues as follows :

One of the most important sections of our museum is that devoted to microscopy, including normal and pathological histology and photomicrographic work. In the cabinets there are nearly 11,000 mounted specimens, illustrating almost every field of microscopical research. Many of these were made twenty years ago and more, and were mounted by processes which have not given good results, so that Dr. Gray, who is in charge of this section, estimates that about 3,000 will be set aside as worthless ; but the rest form a very valuable series to which additions are being constantly made, and materials for which we are specially anxious to obtain. In connection with this section a series of cultures of chromogenic and pathogenic bacteria is kept up for museum exhibits, and also to illustrate methods of work.

While the great majority of the specimens in a medical museum have some relation to diagnosis, prognosis, or therapeutics, the number of those which are of direct interest to the so-called practical physician is not very great. It includes models and casts illustrating dermatology, morbid growths, the results of amputations, excisions, plastic operations, etc., and instruments, apparatus, dressings, etc., of all kinds. Here also may be classed hospital fittings and furniture, means of transportation for sick and wounded, model cases of instruments, emergency chests, etc. Our medical museum has a fair beginning of a collection of this kind, including over a thousand specimens ; but many more are needed to make it reasonably complete. If each medical man who devises a stethoscope, a pessary, a speculum, an ophthalmoscope, or an electro-therapeutic appliance with which he is well pleased, would send a specimen to the collection, its increase would certainly be rapid, and it could always show the latest improvement.

The Army Medical Museum contains what may seem a large amount of material relating to human osteology, and especially craniology, in its relations to North American ethnology, or the history of the development of different varieties of man on this continent ; but it is not actually half large enough to permit of drawing definite scientific conclusions from it. The majority of the crania which it contains have been measured to a certain extent, and the results have been published ; but many other measurements are desirable to permit of comparison with series taken elsewhere, and even measurements already made must be repeated by later and better methods.

We have been trying some experiments with composite photography and superimposed contour tracings as a means of obtaining typical outlines and dimensions for race groups of crania, and these give promise of good results. If the collections of crania of North American Indians in Boston, New York, Philadelphia and Washington could be brought together, a very much better average presentation of the majority of tribes or groups would be obtained than can be furnished by either of these collections taken separately. By composite photography and tracings, combined with uniform methods of measurement, we can practically bring these collections together, and obtain results nearly as satisfactory as if we had them all in one room. We have also fitted up one large room with instruments and apparatus for anthropometry in its widest sense, including psychophysical investigation, and it is intended to make this a complete laboratory for illustration of methods of work.

In London arrangements have been made to have such an anthropometric laboratory in an outbuilding at the South Kensington Museum. The two things have no connection, and it seems to have been placed there because it would obtain more visitors desirous of being measured and tested than if placed anywhere else. In this laboratory, which is, I believe, essentially the same sort of institution as that arranged by Mr. Francis Galton at the Health Exhibition in 1884, and is planned by Mr. Galton, any person can have the regular series of measurements and tests made upon himself for the charge of six cents. There are difficulties in the way of making a charge for such measurements in a government establishment, and there are also difficulties in undertaking to do such work gratis, chiefly on account of the cost. It is, however, so desirable that it should be done, and the data which such observations systematically carried on for a series of years would be so valuable, not only from a scientific point of view, but for practical purposes in connection with life insurance interests, and very possibly with practical medicine, that we should endeavor to overcome these difficulties in some way, and I think it can be done sufficiently, at least, to stimulate private enterprise in this direction. It is possible that we may yet see in large cities establishments of this kind, directed by skilled and reputable physicians having the confidence of the profession, where not only normal but abnormal conditions can be determined ; places where the secretions can be tested chemically and microscopically, ophthalmoscopic and endoscopic examinations of all kinds made, the mode of functioning of muscles and nerves determined, and an authoritative record of the results made for the use of the individual, as evidence of his condition, or for the information of his physician. It would require an already es-

tablished reputation and much skill and tact on the part of the director of such a laboratory, with absolute refusal to give prescriptions or advice in any shape, to make it fully successful; but it may be done.

An important feature of our National Medical Museum should be to show methods of research and of instruction for the benefit of the investigators and the teachers of the country. This includes instruments and apparatus, and, to a limited extent, illustrations of the modes of using them and of the results; it also includes diagrams, models, etc., used for illustrating lectures. For example, as soon as Koch's researches became known in this country, physicians, and especially medical teachers who visited the museum, asked if we could show them the apparatus used by Koch and Pasteur in bacteriological work, and eagerly examined the few specimens of cultures on solid media which we were able to exhibit. The anatomist comes to the museum quite as much to see methods of mounting and preservation, as to see the specimens themselves; the physiologist does not expect to see function directly exhibited, but he does hope to find information about kymographs and constant temperature apparatus, and he wants to see whether Kühne's artificial eye is so useful for teaching purposes that he ought to get one to illustrate his lectures.

The objects of a medical museum are to preserve, to diffuse and to increase knowledge. Its conservative function is to form a permanent record of what has been demonstrated, and to fix the meaning of terms. Even in my brief experience of thirty years the terminology of anatomy, physiology, pathology, chemistry and of most of the specialties has greatly changed, and this not only by addition of new terms, but by the dropping of old ones. To get useful results from the older literature we must know the precise significance of the old words, and, in some cases, the best way to learn this is to examine the specimens prepared by those who used such terms in their descriptions. The specimens in our museum which came from the collections of Professor William Gibson and Dr. Frank Hastings Hamilton are especially valuable, because they were the basis of practical teachings, and should be examined by any one criticising these teachings.

A large proportion of the pathological specimens in this museum illustrate conditions which now rarely occur, forming a group which it is safe to predict will never be duplicated. It is not only that they were gathered during a great war, but that they illustrate the results obtained when antiseptic surgery, as now understood and practiced, was unknown. Never again, I hope will there be brought together such a collection of the effects of pyogenic microorganisms on gunshot

wounds, especially of bone, as may be seen in its cases.

The museum also preserves, for future investigations, objects whose nature or relations are not understood at the time when they are received, and which occur so rarely that the means of studying them by comparison can only be obtained through such preservation.

Upon the function of a museum as a diffuser of knowledge—as a means of education; it is needless to dwell. That it should also strive to increase knowledge is equally certain. This is to be effected by study and comparison of its materials. The results of such study and comparison of a part of the Army Medical Museum collection have appeared in the volumes of the *Medical and Surgical History of the War*. Another part will, I hope, soon be utilized in a study of its collection of human skeletons and crania which has been commenced by Dr. Matthews, of the Army. But a considerable part is as yet only in the stage of agglomeration, and our present business is to collect and preserve, leaving to the future its full utilization.

A medical museum is really used, for purposes of study, by very few persons; but through the teaching of those few its lessons are made known to the whole profession. American physicians in investigating a subject do not, as a rule, think of inquiring as to what museums can show with regard to it, simply because they have not had convenient access to large collections and are not accustomed to make use of them. Thirty years ago we were in much the same situation in respect to medical literature; but as the libraries have grown, desire for bibliographical research has grown also, and I think that in like manner when we have secured a comprehensive National Medical Museum, it will not only be made use of, but will give a powerful stimulus to the formation and progress of other more special collections elsewhere.

What should be the relation of this central National collection to those formed in different parts of the country, either in connection with medical schools, or with museums of broader scope? Certainly they should help one another, and this can be done in many ways. I do not in the least object to a generous rivalry to do the best work, to have the most instructive and artistic preparations. That is a good thing. But I would say to the anatomist of a school, when you have made a preparation which is noteworthy, offer to make a copy for the National collection, where it will be seen by the anatomists of all schools and all countries. To the pathologist of a medical school I would say, after you have secured type specimens for your own collection put aside other good specimens for the National Medical Museum, which will furnish you materials for the purpose.

On the other hand, the collections of the National Museum are available for study by any proper person, and its duplicates should be used to aid other museums which may be in special need of them.

In common with several of the largest and most important medical museums, more especially those of the Royal College of Surgeons and of the Faculty of Medicine of Paris, the Army Medical Museum has the advantage of being closely associated with a large medical library which is in the same building, and at present under the same direction. The increased utility and attractiveness which this gives to both library and museum is very decided.

I have time for only a very condensed statement of the wants of our National Medical Museum. In the first place it needs the intelligent interest and friendship of the medical profession of this country. To a very considerable extent it has had this; were it otherwise it would not be what it is, nor where it is. But it needs more of it, and it can never have too much. Every medical man in this country should help a little and provide for the perpetuation of his name as that of a physician interested in the progress of the profession by sending at least one specimen to it. It is omnivorous in its demands for material, as will be seen by the circular which it has recently issued. But I will name as special wants, human embryos, especially those of a very early age, monstrosities and malformations of all kinds in man or in the lower animals; results of old injuries, such as fractures or dislocations, or of surgical operations, such as excisions, stumps, etc.; injuries and diseases of the eye, ear and nose; new growths of all kinds; diseases of the brain and spinal cord; and specimens illustrating the condition of bones, joints, brain, larynx and other organs in extreme old age.

In the second place it needs a regular supply of funds from the general government. To form and keep in proper condition such a medical museum as this should be is a more difficult and expensive matter than those not acquainted with such work would suppose, and the gifts of specimens from the profession must be supplemented by ample means for the preparation, preservation and proper display of these specimens, and also for the purchase of apparatus and typical specimens of foreign work, in order that the museum may be always able to show the latest state of knowledge and the best ways of doing things.

The annual appropriation for the Museum at present is \$5000. This is sufficient, except that the printing of the catalogue, of which I shall speak presently, must be an extra charge. . . .

The third need of the Museum is a series of the right kind of descriptions of its specimens, given on labels and in a catalogue. Unaided by such

descriptions it has for each man that which he can see in it, and no more. One man will see nothing but an old piece of bone, a shapeless mass of tissue bleached by alcohol, a case of old dingy brass instruments. Another will see in the same things a rare joint atrophy, implying curious abnormal nerve influence; a leprous nodule, whose history, if we knew it, would reach back through the lazarettoes of the middle ages to the far East, and whose bacilli may be the lineal descendants of those that vexed Naaman the Syrian; a case of microscopes illustrating the development of that instrument, from the first rough iron tube of the spectacle-maker of Nuremberg to the delicate and complicated instrument through which we now peer curiously into that world which lies within the world of unassisted vision. By our labors and catalogues we must tell men what to see; but to do this we must first see ourselves. The aphorism that a first-class museum would consist of a series of satisfactory labels with specimens attached, means a good deal. Something has been done in this direction, as you will see on inspection of the cases; but I often wonder what sort of labels a man who has spent years in investigating the normal and abnormal structure and relations of one organ, would write for our specimen of that organ. Such help as this we need; kindly, truthful criticism, the pointing out of errors and of new points of view for this mass of material.

We also need a series of printed catalogues. One of these should be in the form of compact handbooks relating to particular sections of the collection, and intended partly for the use of visitors while in the museum and partly as a ready means of letting distant friends know what material it most needs in different departments. It should also print a complete illustrated catalogue of the whole collection for the use of the investigators and teachers of the profession. Congress has been requested to grant authority for the printing of such a catalogue by the Government Printer. The material for it is nearly ready, and it would make three volumes, each the size of one of the volumes of *The Medical and Surgical History of the War of the Rebellion*.

Our museum, like the library with which it is associated, includes all the specialties. No physician is so learned or skilful that he can find no instruction there, and no one is so ignorant that he cannot comprehend some of the lessons which it teaches. Taken together these institutions should contribute in no small degree to our National prestige, for which eminence in scientific work and teaching is an essential element, and if it be remembered that they are only twenty-five years old, and that during that period we have been making medical history at a tremendous rate, surely some incompleteness and crudeness may well be excused or overlooked.

Speaking in behalf of the Army Medical Department, and for the dead as well as for the living who have been charged with this work, I can truly say that we have been very proud of our charge, and that we have done our best, each according to his capacity and opportunity, to make

the museum and library such as a great profession and a great nation have a right to demand.

Appended to the address are tables enumerating the principal medical museums both in Europe and this country. We have only space for the table giving those in the United States, as follows:

LOCALITY AND NAME OF MUSEUM.	Total number of specimens.	NUMBER OF SPECIMENS IN EACH DEPARTMENT.					Number of specimens added during last five years.	Am't expended during last five years.
		Comparative anatomy.	Normal human anatomy.	Embryology.	Pathological anatomy.	Material medica.		
Albany: Medical College Museum.	5500	250	1250	200	3100	700	770	\$660
Boston: Warren Anatomical Museum, Harvard University.	7900						470	\$973
Chicago: Chicago Medical College Museum.	1332	122	300	10	200	700		
Rush Medical College Museum.	850	70	100	50	100	200		
Cincinnati: Miami College Museum.	3078	450	603	75	823	1002		
Museum of Hospital and Pathological Dep't of Cincinnati University.	1250				1250			\$89
Louisville: Medical Department University of Louisville Museum.	1992	276	275	127	868	446		2250
New Orleans: Museum of Tulane University.	2500							500
New York: Pathological Cabinet of N. Y. Hospital.	2366				2366		542	14,028
Museum of Medical Dep't University of New York.	8000	1000	4000	500	2500		50	7250
Wood Museum, Bellevue Hospital.	2224	256	282	69	1613			
Philadelphia: Mütter Museum, College of Physicians.	3700	296	242	140	3000			
Wistar and Horner Museum, University of Penna.	7458	919	1355	292	2717	2175		2950
Jefferson College Museum.	2500						1000	
Washington: Army Medical Museum.	14,360	1685	2853	108	8354	814	3789	23,356

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM AN OCCASIONAL CORRESPONDENT.)

Dr. William Murrell's Work on Chronic Bronchitis—Medical Advertising in London—Report on the late Emperor Frederick's Case—The next Congress at Washington and Medical Honors—The Father of the American Medical Association.

Dr. William Murrell, of the Westminster Hospital, London, is engaged in the preparation of a work on chronic bronchitis and its treatment, a complaint which is very prevalent here, and to which the Doctor has paid much attention. He is still a firm believer in the efficacy of ipecacuanha spray introduced by him and Prof. Ringer, in 1874. The ordinary ipecacuanha wine is used, either pure or variously diluted, according to the severity of the symptoms. The inhalation is performed once or twice a day and its duration rarely exceeds twenty minutes. The apparatus employed is a common hand-ball spray, or one worked by steam, which is a modification of Siegle's. Certain precautions are taken, which although apparently trivial, are not without importance in the attainment of a successful result. The patient is taught to inspire deeply so as to bring the spray in direct contact with the irritated mucous membrane of the bronchial tubes. If he should exhibit a tendency to involuntarily arch his tongue up against the roof of the mouth he is told to protrude it so as not to obstruct the entrance of the atomized fluid into the air passages.

Any fluid which may accumulate in the month he is directed to spit out as it is found by experience that if swallowed it is apt to give rise to nausea, and even vomiting. A course of treatment lasts from three weeks to a month, and even if the patient is not permanently cured he is usually relieved of his cough, the shortness of breath and other distressing symptoms soon disappear. In very obstinate cases Dr. Murrell employs in addition "Burroughs' Chloride of Ammonium Inhaler," a little acetic acid colored with tincture of litmus being added to the water in the wash bottle, to cut off any free ammonia and prevent the occurrence of spasmodic cough and bronchial irritation, which when this is neglected is sometimes caused. In suitable cases certain essential oils dropped on absorbent cotton-wool are added to the water and are volatilized with the fumes. The drugs best adapted for this purpose are pure terebine, pinol, oil of sandal-wood, oil of lemon, and oil of cubebs. Care is taken in the selection of the appropriate remedy, and it is found that the character of the expectoration is the best guide: Tar is the best drug for internal use, and is given in the form of syrup of tar, mixed with an equal quantity of syrup of Virginia prune. It is palatable and may be taken in doses of a tablespoonful in water several times a day, in fact, the oftener the better. When the expectoration is difficult it is an advantage to add to each dose five drops of a 1 in 50 solution of hydrochlorate of apomorphine, which although in large doses an emetic, acts in small doses as an excellent expectorant. Dr. Murrell speaks favorably of the "Aromatic Oil of Tar" sold in the

United States, and finds that, as a rule, patients take it well, and like it. He says that he believes it is a solution of wood tar in rum flavored with treacle. He has recently been investigating the composition of several patent medicines, and finds that "Spirone" is a 2 per cent. solution of iodide of potassium mixed with glycerine and acetone. It may be used as a spray in chronic bronchitis and bronchitic asthma. When the asthmatic symptoms predominate, Dr. Murrell employs fuming preparations, giving the preference to nitre papers made of very thick blotting-paper saturated with equal parts of chlorate and nitrate of potassium and sprinkled when dry with Friar's balsam, essence of camphor, tincture of stramonium, or tincture of sennal. The addition of a little iodide of potassium, as in the "ozone papers," is useful. Sometimes various forms of incense are employed, the following being the favorite formula: Powdered nitre, one ounce; powdered anise fruit, one ounce; and powdered stramonium leaves, two ounces. This may be improved in suitable cases by the addition of two ounces of sunbal root, or two ounces of powdered benzoin. Cubebe cigarettes, or cigarettes made of grindelia robusta, or Hunrod's powder, mixed with Turkish tobacco, are useful and often prescribed. Dr. Murrell is also engaged in preparing a fourth edition of his work on "Massage as a Mode of Treatment."

Some days ago in passing a news stand my attention was attracted to a paper known as the "Family Doctor." Having plenty of leisure time to read, I purchased the people's medical adviser, but was startled on opening the periodical to find a good wood cut of Dr. William Miller Ord, of London, occupying the front page. Accompanying the picture of this medical gentleman was a clever but adroit sketch of Dr. Ord's life, given very minutely, even including his office location and all his movements but one. The medical man who wrote this article—and it was evidently written by one well informed in medical matters, or perhaps dictated by the doctor himself—omitted to state that Dr. Ord was in Washington during the late meeting of the Ninth International Medical Congress, but out of purely personal reasons did not attend the meeting. I have since been creditably informed that the College of Physicians, of which Dr. Ord is a member, have under consideration the investigation of this recent method of medical advertising.

Sir Morell Mackenzie, the eminent physician of the late Emperor Frederick of Germany, is preparing an official report in detail of his case, which will shortly appear here in book form. The work will only cover one hundred pages, and Sir Morell Mackenzie is to receive from his publishers the enormous sum of fifteen hundred pounds for his contribution. Seven thousand five hundred dollars, or fifteen hundred pounds, is said to be the largest sum of money which has ever

been paid by a publishing house to a medical man for any contribution.

The meeting this month, in Washington, of the Congress of American Physicians and Surgeons, has made little or no impression upon the mass of medical men throughout Europe. Now and then I have heard reference made to the meeting in a kindly manner in this and other medical centres. A very large number of eminent members of the profession in all parts of Europe have been invited, and even urged, to attend, and but few, very few, will be at the meeting, even though, I am told, suggestions have been made to many that possibly American degrees may be conferred upon many who will honor them by their presence. Unfortunately for the present managers of the Congress, the part they have taken during the past year against their own countrymen has now become more apparent here, and the reaction has been anything but favorable to them and their meeting. The suggestion, or even the promise, of degrees to be given out, which is whispered around here, may induce a few to attend the meeting, but the very many invited will stay at home.

I cannot close this brief letter without making reference to the second visit to the late meeting of the British Medical Association, of the Father of the American Medical Association. Dr. Davis was received not only warmly, but enthusiastically, and all honor was shown the late President of the Ninth International Medical Congress.

...

DOMESTIC CORRESPONDENCE.

Criminal Abortion and State Laws.

Dear Sir:—I notice in THE JOURNAL of Sept. 1, 1888, that you say in your able and instructive editorial on "The Ethics of Marriage," that "New Mexico, New Jersey, South Carolina, Texas and the District of Columbia have no laws relating to the punishment of attempts to perform abortion." As to the other States, I have nothing to say; but New Jersey in this, as well as other important matters of protection of the health of her inhabitants, is not behind any of her sister States in regard to the stringency of her laws, and he who violates in this, as the records of our courts show, gets a taste of "Jersey justice." In support of the above I send you a section from our criminal code, viz:

Section 27. "That if any person maliciously or without lawful jurisdiction, with intent to cause and procure the miscarriage of a woman then pregnant with child, shall administer to her, prescribe for her, or advise or direct her to take or swallow any poison, drug or medicine or noxious

thing, and if any person or persons maliciously and without lawful justification shall use any instrument or means whatever with the like intent, he shall, on conviction thereof, be adjudged guilty of a high misdemeanor; and if the woman or child die in consequence thereof, shall be punished by fine not exceeding *five thousand* dollars, or imprisonment at hard labor for a term not exceeding fifteen years, or both, at the discretion of the court. And in case the woman or child do not die in consequence thereof, such offender shall be adjudged guilty of a misdemeanor, and be punished by fine not exceeding one thousand dollars, or imprisonment at hard labor for a term not exceeding five years, or both, in the discretion of the court before whom such conviction shall be had."

And on this law there have been several decisions; we will name but two, to show how the courts regard it.

First. "A woman who voluntarily takes a potion administered to her for the purpose of causing an abortion, is not an accomplice in the crime of the person administering it, the law making it no crime in her to take the potion." And,

Second. "The thing administered must be noxious in its nature, but it is not necessary to prove it will produce miscarriage; the crime is complete, whether in the opinion of others it is capable of producing that result or not."

Thus you see, Mr. Editor, that New Jersey is not one of the States that *winks* at that too frequent crime, and one that some of our profession at times yield to at the appeals of the unfortunate. Hoping that in justice to the fame of our State you will give the above a place in *THE JOURNAL*, I am, Yours truly,

D. B. INGERSOLL, M.D.

May's Landing, N. J., Sept. 10, 1888.

The Report of the Medical Examining Board of Virginia.

Dear Sir:—Your editorial in the issue of September 8, on the Report of the Medical Examining Board of Virginia, should be widely read and deeply pondered. To the schools such a report is as the handwriting on the wall, "Mene, mene, tekell, upharsin;" to the profession of every State an encouragement to persevere in the good work of organizing Medical Boards.

It is not a function of the University to grant the license to practice. That the M.D. degree carries this privilege is a modern usurpation, which does not extend to degrees in other faculties. It is a function of the State, to be exercised either directly, as is done in Germany, or indirectly, by the profession organizing and appointing suitable examiners. The struggle is between the colleges and the profession, and I would refer any one who may feel doubtful as to the issue of the

fight, to an address which I delivered in 1885, when President of the Canada Medical Association (*Med. News*, 1885, ii); in which I sketched the organization of the profession in the Provinces of Ontario and Quebec, which led, in the former Province, to the complete subjugation of the schools.

You may be surprised, Sir, at these sentiments from a dyed-in-the-wool school-man, but I feel convinced that the future of medical education in this country lies largely in the establishment of State Boards, such as exist in Virginia and North Carolina, which shall (1) control the entrance examination, (2) regulate the curriculum, and (3) grant the license to practice.

Yours very truly,

WILLIAM OSLER, M.D.

1502 Walnut St., Philadelphia.

"The Ethics of Marriage."

Dear Sir:—In your editorial notice of "Ethics of Marriage," by Dr. H. S. Pomeroy, in issue of Sept. 1, you refer to "Dr. Pomeroy's illustration of plucking unripe and ripe fruit from the tree." As the illustration is as ancient as it is striking, I take the liberty of sending it as originally stated by Dr. Percival Willughby, in 1670. In a work of this date written for midwives, he says: "Let midwives observe the waies and proceedings of nature for the production of her fruit on trees, or the ripening of walnuts and almondes from their first knitting to the opening of the huskes and falling of the nutt; the greene huskes sticking so close that it is not possible to separate the huske from the shell, whilst it is unripe; but as the fruit ripenneth the huske choppeth, and with a fissure openeth, and by degrees separateth the fruit without any enforcement." This quotation, with others from the same author, will be found in the preface of "Denman's Practice of Midwifery," 1821. Respectfully,

HUNTER H. ROWELL, M.D.

467 Prospect St., Cleveland, O., Sept. 11, 1888.

BOOK REVIEWS.

PROCEEDINGS AND ADDRESS AT A SANITARY CONVENTION held at Albion, Michigan, Dec. 6 and 7, 1887, under the direction of a Committee of the State Board of Health and a Committee of Citizens of Albion. Reprint No. 274. Lausing: 1888.

This pamphlet of 70 pages is interesting as showing what kind of papers are read at the Sanitary Conventions for which Michigan is becoming somewhat famous. Sanitary conventions teach the people what sanitation is, and show sanitary and health authorities to what extent and in

what way the public is interested in sanitary matters.

In the pamphlet before us are a number of addresses, papers and discussions, by medical and laymen. Some deal with local matters—the sanitary state and needs of Albion. This discussion of particular cases and local matters is an important point in teaching sanitary matters to the people. There are also papers and addresses on special subjects of general interest, such as "Nuisances: What they are and how to prevent them," by R. A. Martin, M.D.; "Diseases incident to the Poor," by Dr. A. G. Bruce. "School Hygiene," by Hettie Warner Bradley; "Money Value of Sanitary Work," by Rev. B. A. Brown, M.D.; "Prevention of Communicable Diseases, from the Standpoint of the Health Officer," by H. D. Thompson, M.D.; "Prevention of Communicable Diseases, from the Standpoint of the Clergy," by Rev. B. S. Taylor, M.D.; the same from the standpoint of the Lawyer, by R. Loud; the same, from the standpoint of the State Board of Health, by Dr. Henry B. Baker.

If one wishes "good literature" for the people, it can be had from the Michigan State Board of Health.

We omitted to mention the address of the President of the Convention, Rev. Z. R. Fiske, D.D., LL.D., on "Sanitation from the Standpoint of the Individual—Sanitation from the Standpoint of the State."

HYGIENE FOR BASE BALL PLAYERS. Being a brief Consideration of the Body as a Mechanism; the Art and Science of Curve Pitching; a discussion of the Causes and Treatment of the Disabilities of Players, etc. By A. H. P. LEUF, M.D., Director of Physical Education at the University of Pennsylvania and at Swarthmore College, etc. Small 8vo, paper, pages 135. Philadelphia: A. J. Reach & Co. 1888. Chicago: W. T. Keener.

Dr. Leuf is the only medical man, so far as we know, that has given any special attention to the injuries of base ball players, and what he writes is all the more valuable because he himself is an expert player. He is, we believe, one of the good curve pitchers in the country, has suffered from pitcher's sore arm, and can therefore write more intelligently of it. In America base ball has become an acknowledged occupation, and has its own special injuries and medical features. Physicians will be interested in Dr. Leuf's description and explanation of curve pitching.

A PHARMACY LAW FOR LOUISIANA.—The efforts of the pharmacists of Louisiana to secure a law in their State to regulate the practice of pharmacy have finally been successful. The last Legislature passed an act which was approved July 11, and will be in force as soon as the necessary machinery is provided.

MISCELLANEOUS.

NEW YORK STATE MEDICAL ASSOCIATION.—Programme of the Proceedings of the Fifth Annual Meeting, held at the Hotel Brunswick, Fifth Ave. and 27th St.

FIRST DAY—OCTOBER 9, 1888. MORNING SESSION, 9 O'CLOCK. ORDER OF BUSINESS.

- I. Calling the meeting to order.
- II. Announcement by the Secretary of the number of attendants from each district.
- III. Report of the Committee of Arrangements.
- IV. Address by the President.
- V. Annual Report of the Council.
- VI. Annual Report of the Treasurer.
- VII. Reports of special committees.
- VIII. Unfinished business.
- IX. New business.
 - A. Annual Reports of the Presidents of Branch Associations, in their numerical order, to be read by title.
 - B. Annual Report of the President of the New York County Medical Association, to be read by title.

"A Case of Anæsthesia by the Inhalation of Nitrous Oxide, supposed to be the first on record," by Oliver P. Hubbard, M.D., of New York Co.

"Forced Respiration: History, Apparatus, Report of six (or more) cases. Effects of, on narcotized human subjects, adaptability of, in cases of drowning or shock," by George E. Fell, M.D., of Erie Co.

"The Origin and Medical Treatment of Uric Acid Calculi of the Kidney," by William D. Garlock, M.D., of Herkimer Co.

"Railway Injuries," by Charles W. Brown, M.D., of Chemung Co.

X. Announcement by the presiding officer that the Fellows from the different districts shall appoint two members of the Nominating Committee from each district.

XI. Appointment by the President of a member at large of the Nominating Committee.

XII. Reading and adoption of the minutes of the session.

XIII. Adjournment of the session at 12:30. During this recess of half an hour, the Fellows from the different districts shall meet to appoint the two members of the Nominating Committee from each district.

AFTERNOON SESSION, 1 O'CLOCK. DISCUSSION ON NOSOGRAPHY.

This discussion will be opened by Alfred L. Carroll, M.D., of Richmond County, with a paper in which he propounds the following questions:

Question 1. What general principles should govern classification and nomenclature, irrespective of their particularization in medicine?

This question will be discussed by M. L. Britton, Ph.D., of New York Co., and by Simeon T. Clark, M.D., of Niagara Co.

Question 2. What are the advantages of a nosographical system based upon anatomy?

This question will be discussed by Edward G. Janeway, M.D., of New York Co., and by Frank W. Ross, M.D., of Chemung Co.

Question 3. Does a nosography based upon anatomy afford satisfactory means for the registration of clinical phenomena?

This question will be discussed by E. D. Ferguson, M.D., of Rensselaer Co., by H. D. Didama, M.D., of Onondaga Co., and by Charles G. Stockton, M.D., of Erie Co.

Question 4. What place in nosography should be assigned to bacteria, ptomaines, leucomaines, and "extrac-

tives" respectively; [a] from a bio-chemical, [b] from a clinical point of view?

This question will be discussed by Elwyn Waller, Ph.D., of New York Co., by Charles A. Doremus, M.D., of New York Co., and by Nelson B. deS. Sizer, M.D., of Kings Co.

NIGHT SESSION, 7:30 O'CLOCK.

"Hiccough, with Notes on Treatment," by Frederick W. Putnam, M.D., of Broome Co.

"Diphtheritic Paralysis." "The Treatment of Diphtheria," by J. Lewis Smith, M.D., of New York Co.

"A Case of supposed Partial Twist of the Intestines," by George E. McDonald, M.D., of Schenectady Co.

"A New Treatment of Pneumonia," by Godfrey R. Martine, M.D., of Warren Co.

"Rheumatoid Arthritis." by E. J. Chapin Minard, M.D., of Kings Co.

"The Use and Abuse of the Forceps in Obstetrics," by John P. Garrish, M.D., of New York Co.

SECOND DAY—MORNING SESSION, 9 O'CLOCK.

Address on Surgery, by William H. Carmalt, M.D., of Connecticut.

"Ocular Palsies," by Alvin A. Hubbell, M.D., of Erie Co.

"Heredity in certain Classes of Cases of Chronic Diffuse Nephritis," by B. A. Church, M.D., of Otsego Co.

AFTERNOON SESSION, 1 O'CLOCK.

Discussion on Tumors. General consideration of Tumors from a surgical point of view.

This discussion will be opened by John W. S. Gouley, M.D., of New York County, with a paper propounding the following questions:

Question 1. What are neoplasms, and what are the characters which differentiate them from blastomata, and these from inflammatory processes?

Question 2. What are the advantages of naming and arranging the neoplasms in accordance with their histogenesis?

Question 3. What is the value of the anatomical basis to the clinician when the question of malignancy arises?

Question 4. What are the objections to the grouping of neoplasms in accordance with benignity and malignity?

These questions will be discussed by Hermann M. Biggs, M.D., of New York Co.

Question 5. What constitutes malignancy, histologically and clinically?

Question 6. What is the mechanism of the necrotic process which so often occurs in certain neoplasms?

These questions will be discussed by Charles B. Nancrede, M.D., of Pennsylvania, who will also discuss Questions 4 and 13, and by Nathan Jacobson, M.D., of Onondaga Co., who will also discuss Question 13.

Question 7. What is the rationale of the recurrence of excised neoplasms in distant parts or in the viscera?

Question 8. What is the explanation of the tendency in certain neoplasms to involve secondarily neighboring lymphatic ganglia?

These questions will be discussed by Joseph D. Bryant, M.D., of New York Co., who will also discuss Question 13, by Uri C. Lynde, M.D., of Erie Co., who will also discuss Question 13, and by Leroy J. Brooks, M.D., of Chango Co., who will also discuss Question 13.

Question 9. What therapeutic deductions are to be drawn from the analysis of the genesis and history of a given neoplasm?

Question 10. What are the indications and contraindications of the excision of neoplasms?

These questions will be discussed by Frederic S. Dennis, M.D., of New York Co., who will also discuss Question 13.

Question 11. What is the average duration of life from the time of the appearance of a malignant neoplasm which has not been treated?

Question 12. To what extent does the excision of malignant neoplasms prolong life?

These questions will be discussed by William T. Bull, M.D., of New York Co., who will also discuss Question 13, by Charles W. Browne, M.D., of Chemung Co., who will also discuss Question 13, and by E. M. Moore, M.D., of Monroe Co., who will also discuss Question 13.

Question 13. Are malignant neoplasms ever cured?

This question will be discussed by Charles T. Parkes, M.D., of Illinois, who will also discuss Question 12, by William H. Carmalt, M.D., of Connecticut, by Stephen Smith, M.D., of New York Co., and by William S. Tremaine, M.D., of Erie Co., who will also discuss Questions 10 and 12.

NIGHT SESSION, 7:30 O'CLOCK.

Discussion on Tumors, continued.

THIRD DAY, OCTOBER 11—MORNING SESSION, 9 O'CLOCK.

Address on Medicine. "Medical New York in 1880," by John Shrady, M.D., of New York Co.

"Mechanism of Posthumous or Post-mortem Inversion of the Uterus," by Isaac E. Taylor, M.D., of New York Co.

Address on Obstetrics, by George Tucker Harrison, M.D., of New York Co.

AFTERNOON SESSION, 1 O'CLOCK.

Discussion on Puerperal Septicæmia.

This discussion will be opened by Carlton C. Frederick, M.D., of Erie Co., with a paper in which the following questions are propounded:

Question 1. What facts can be cited in support of the doctrine that the puerperal febrile diseases owe their origin to the action of microorganisms?

This question will be discussed by Hermann M. Biggs, M.D., of New York Co.

Question 2. Is there a specific febrile disease peculiar to the puerperal woman, or are the various forms of puerperal fever the result of septic or putrid infection similar to or identical with that familiar to surgeons as septicæmia? What etiological relations exist between the zymotic diseases and some forms of puerperal febrile diseases, and in what manner are the zymotics modified by implantation upon the puerperal state?

These questions will be discussed by Everard D. Ferguson, M.D., of Rensselaer Co., and by S. B. Wylie McLeod, M.D., of New York Co.

Question 3. What conditions of the woman predispose to the development of puerperal septicæmia? To what extent are the accidents of childbirth, together with the manipulations of the accoucheur, to be considered as etiological factors in puerperal infection? Are there any antiseptic measures before, at, or after labor, under any and all conditions and complications, that may be relied upon as prophylactic to puerperal septicæmia?

These questions will be discussed by Frank W. Ross, M.D., of Chemung Co., and John Shrady, M.D., of New York Co.

Question 4. Are the lesions resulting from puerperal infection always the same? If various lesions result, can an accurate differential diagnosis be made between them, based alone upon the history and symptoms?

These questions will be discussed by William H. Robb, M.D., of Montgomery Co.

Question 5. What is the pathology of each of the several forms of puerperal septicæmia? What conditions or circumstances incident to puerperal septicæmia, and what forms of the disease, tend to render it fatal?

These questions will be discussed by Frank Grauer, M.D., of New York Co.

Question 6. What plan of antiseptic treatment can be employed with a large degree of success in each of the several forms of the disease? Does every rise of temperature above 100° F. in the puerperal woman constitute an indication for immediate resort to irrigation? When should irrigation be intra-vaginal, and when intra-uterine?

When irrigation is employed, how often should it be done, and when should it be discontinued? What hygienic, medicinal, and dietetic treatment is to be used, in addition to the local antiseptic measures? To what extent should alcoholic stimulants and anti-pyretics be used?

These questions will be discussed by William T. Lusk, M.D., of New York Co., and Rollin L. Banta, M.D., of Erie Co.

Question 7. What sequelæ of puerperal septiciæmia tend to impair the subsequent health of the woman in case of her recovery? To what extent do chronic diseases of the pelvic organs owe their origin to puerperal septiciæmia?

These questions will be discussed by John G. Orton, M.D., of Broome Co.

NIGHT SESSION, 7:30 O'CLOCK.

Discussion on Puerperal Septiciæmia, continued.

OFFICERS AND COMMITTEE OF ARRANGEMENTS.

John Cronyn, President, E. D. Ferguson, Secretary, *Ex-officio Members of the Committee.*

Glover C. Arnold, Chairman.

C. Ellery Denison, Secretary.

E. S. F. Arnold, Alfred L. Carroll, John W. S. Gouley, Frank Grauer, John H. Hinton, Charles A. Leale, J. R. MacGregor, S. B. Wylie McLeod, Augustus D. Ruggles, John Shradly, E. H. Squibb, Isaac E. Taylor, John G. Truax, William T. White.

A STEP NEARER.—We learn that at the last meeting of the American Medical Association, an amendment to the constitution of that body was presented providing for the formation of a Section on Pharmacy and Materia Medica. The proposed amendment provides that the Section shall be organized in the same manner as the recently established Dental Section, and that reputable pharmacists may be sent as delegates by the various State pharmaceutical associations. Under the rules, the amendment lies over for action at the next annual meeting.

Our readers will remember the plea made for this movement by Dr. Cutter, and the supposed difficulties of its accomplishment, which were discussed in our columns soon after the appearance of the doctor's proposal. Notwithstanding the supposed ethical complication which was mentioned in this discussion, we hear that the prospects of the establishment of such a Section are good; if the physicians are really desirous of effecting a union with their pharmaceutical brethren, they will find a way of overcoming any such difficulties.

We hope to see the step now taken result, in due time, in establishing a relation between the two professions which cannot fail to be beneficial to both.—*The Druggists Circular and Chemical Gazette*, September, 1888.

SECRETARIES OF STATE MEDICAL SOCIETIES, prominent district and city societies, that wish to exchange, or are now exchanging their publications with those of the Nebraska State Medical Society, are asked to notify the Secretary, Dr. A. S. v. Mansfelde, Ashland, Neb., when the "Omaha Clinic," containing the proceedings of the Society, will be promptly mailed to them.

REMARKABLE FECUNDITY.—Mrs. Norman, the wife of a painter living at Fratton, Portsmouth, is reported to have given birth to four children—three boys and a girl—of whom only the girl survives. Mrs. Norman, who is about 40 years of age, is said to be the mother of twenty-one children, of whom nine are living. She had previously had twins, and seven years ago triplets.—*British Med. Jour.*

MR. CHARLES TRUAX, of the well-known surgical instrument house at Chicago, was granted sufficient time at the recent meeting of the British Medical Association to enable him to explain the merits of the Allen Surgical Pump.

THE RIGI BRAND OF CONDENSED MILK has been condemned by the Board of Health, New York City, on an official analysis showing a deficiency of from 5 to 9 per cent. of fat as compared with pure condensed milk; and all of said brand found in the city has been ordered to be seized.—*Boston Journal of Health*, Sept., 1888.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from September 8, 1888, to September 14, 1888.

Col. Charles Page, Asst. Surgeon-General, Medical Director of the Department, will proceed to Fts. Riley and Hays, Kansas, Post near Denver and Fts. Crawford, Lewis and Lyon, Col., and return, on public business. The travel enjoined is necessary for the public service. Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., September 7, 1888. S. O. 114.

Lt.-Col. Basil Norris, Medical Director, will proceed to Ft. Klamath, inspect the medical department at that post, and upon completion thereof return to these Headquarters. Hdqrs. Dept. of the Columbia, Vancouver Bks., W. T. S. O. 103, September 3, 1888.

Major Daniel G. Caldwell, Surgeon, is granted two months' leave of absence from September 14, 1888. S. O. 40, A. G. O., September 10, 1888.

Capt. Fred. C. Ainsworth, Asst. Surgeon, will, by direction of the Secretary of War, proceed to Kennebec Arsenal, Augusta, Me., on public business connected with the Medical Department of the Army. On completion thereof will return to his station in this city, Washington, D. C. S. O. 217, A. G. O., September 11, 1888.

Capt. John M. Banister, Asst. Surgeon U. S. Army, is granted two months' leave of absence, with permission to apply for an extension of one month, to take effect when his services can be spared. S. O. 211, A. G. O., September 10, 1888.

Capt. Norton Strong, Asst. Surgeon, by direction of the acting Secretary of War, will report in person, at 11 o'clock A.M., October 18, 1888, to Brig.-Gen. John R. Brooke, President of the Retiring Board in session at Omaha, Neb., to give testimony in a case pending before the Board. Upon completion of this duty he will return to his proper station. Par. 9, S. O. 212, A. G. O., September 12, 1888.

First Lieut. Nathan S. Jarvis, Asst. Surgeon, is granted one month's extension of leave of absence, on surgeon's certificate of disability. S. O. 210, A. G. O., September 10, 1888.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending September 10, 1888.

Surgeon George Purviance, to proceed to Fairport, O., as Inspector. August 27, 1888.

Surgeon R. D. Murray, to proceed to Key West, Fla., September 5, 1888.

Surgeon W. H. H. Hutton, to take temporary command of Camp Perry, Fla. September 8, 1888.

P. A. Surgeon John Guitéras, to proceed to Jacksonville, Fla., after return from duty, on special train from Jacksonville to Hendersonville, N. C. September 8, 1888.

P. A. Surgeon W. D. Bratton, to proceed to San Francisco, Cal., and report to Surgeon H. W. Sawtelle for duty. September 8, 1888.

P. A. Surgeon Eugene Wasdin, to rejoin his station at Mobile, Ala. September 5, 1888.

Asst. Surgeon G. M. Magruder, to proceed to Mobile, Ala., and assume temporary charge of the Service. August 31, 1888.

Asst. Surgeon J. B. Fattie, to proceed to Memphis, Tenn., and relieve P. A. Surgeon C. T. Peckham. August 31, 1888.

Asst. Surgeon G. M. Magruder, to proceed to Way Cross, Ga. September 6, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, SEPTEMBER 29, 1888.

No. 13.

PRESIDENT'S ADDRESS.

THE RELATION OF SOCIAL LIFE TO SURGICAL DISEASE.

Delivered at the Annual Meeting of the American Surgical Association, Sept. 13, 1888.

BY D. HAYES AGNEW, M.D.,
OF PHILADELPHIA, PA.

Fellows of the American Surgical Association:—
As the generations fare on, enriched by the results of scientific labor, which pours its tides of opulence into all departments of human thought and industry, there follow through a reactive or reflex influence, certain notable changes, not only on the life and manners of a people, but on their physical and mental diseases. The more advanced a civilization the more complex become the problems which surround it.

While the accumulation of wealth and the multiplication of appliances for human comfort have in the aggregate contributed to the well-being of the race, yet there is reason to fear, that the insatiate and ambitious demands of the masterful leaders in the work of the world, unless conditioned and environed by reasonable safeguards, may acquire their triumphs at the expense of human life. It is a suggestive and solemn thought, that in the victorious march of civilization, thousands of victims must perish beneath her chariot wheels. There really seems to be a perpetual antagonism between man's inventions and discoveries, and the well-being of a no inconsiderable fraction of humanity. He reduces the elastic vapor of water to practical use, and is rewarded by seeing countless numbers of human beings blown into shapeless masses by his rebellious servant. His chemistry creates formidable explosives, capable of dislodging the solid strata of the earth, and yet, in wicked hands, become instruments for consummating such diabolical plots as serve to unsettle the peace of a nation. He rears manufactories for fashioning multitudinous fabrics which minister to the comfort and luxury of the race, and yet while the hands of the fabricator are busy manipulating the materials of these industries, he is breathing a death laden air. We send our missionaries to China and the Sandwich Islands

to reclaim their people from the barbarities of heathenism, and then our commerce to ruin their souls and wreck their bodies. There seems, indeed, to be an external conflict between good and evils.

Considerations like these naturally lead to a very inviting field of study, namely, the relation between the material prosperity of a people and the forms of their disease. What I propose, however, in discharging one of the duties belonging to the honorable office to which, by your kind suffrages I have been elected, is very briefly to follow one line of this inquiry, that is,

THE RELATION OF SOCIAL LIFE TO SURGICAL DISEASE.

There is no tyranny more exacting or despotic than that exercised by the conventionalities which govern our living. All stages of life from infancy to old age are under its domination. It dictates the education, the manners, the walk, the dress, the forms of speech, in fine the whole being. Beyond all contradiction the behests of fashion are vastly more influential in governing public conduct, than any arguments drawn from the teachings of structure and function. As a rule, when the conflict is between taste and reason, the victory will be on the side of taste. In nothing is this more forcibly displayed than in the apparel used to protect the body. It is not an agreeable task to peep into the wardrobes or dressing-rooms of our fair countrywomen. I have no special taste for exploring museums of bizarre collections. Indeed, without a key to interpret the curious and ingenious mechanisms for clothing the form divine, such an exploration would be like an archæologist attempting Egyptology ignorant of cuniform inscriptions. I have, however, some knowledge of human anatomy in its broadest sense, and when I look upon the masterpieces of the human form, whether in marble or on canvas, a Belvedere Apollo, or a Venus de Medici, and contrast these with the dressed-out specimens of modern women, I am forced to admiration; not so much at the amazing ingenuity displayed in concealing the divinely appointed form, as at the plasticity and patient submission of mortal clay under the despotism of a conventional inquisition. Were these processes

of mutilation and abnormality harmless, did the body consist of a mere mass of protoplasm, capable under the application of certain stimuli of assuming, normally, protean shapes, the subject might be passed over with the feelings of a naturalist, but this is not so. These violations of the laws of structure bring with them serious penal inflections, which, did they terminate with the original defender, might be dismissed with a sentiment of pity. But projecting as they do, their baneful consequences to successors, they become proper subjects for criticism.

Let me name a few examples as illustrative of my subject. For some time the profession has been speculating on the causation of nasal and post-nasal catarrh, with its accompanying auditory defects, the growing frequency of which can not have escaped general observation. Doubtless no single agency will explain the presence among us of this unpleasant disease, yet there are facts connected with this affection which to me are very suggestive. I cannot recall an instance in which I have met with the disease among females belonging to the Society of Friends—Dunkards or Menonites. If this, on more extended observation proves to be true, may not the head-dress peculiar to these people be accepted in explanation of their exemption? The bonnet which at one time overshadowed the entire head, as all know, has been gradually shrinking in its dimensions, until it has become a mere shadow of its former self, and offers no protection whatever to the head. As a substitute, I would not insist upon the quaint head-gear of the Friend, though I believe that any modification which will protect this part of the body, will lessen the tendency to catarrhal inflammation of the naso-pharyngeal mucous membrane.

Muscular Restraint.—A legion of physical imperfections arises from muscular restraint. Among these may be mentioned weak ankles, narrow or contracted chests, round shoulders, projecting scapulæ and lateral curvatures of the spine. The foolish concession to appearance, and the unwise partiality of parents for enforced systems of education, the demands of which bear no just proportion to the capacity of the infantile mind, constitute the initial or determining force of these physical imperfections. In many cases the weak ankles of children, characterized by eversion of the feet, thus allowing the superincumbent weight of the body to be transmitted to the latter inside of the proper centre of support, is largely chargeable to the miserable practice of placing on the little ones, long before they are able to walk, boots tightly laced up the limbs some distance above the ankles. The confinement of the flexor and extensor muscles by this constriction, prevents that free play of movement which reacts so favorably on all the elements of an articulation; and that too, at a time when the growing forces

are at full tide, so that when the time arrives for standing and walking, the muscles are unequal to the firm support of the joint. The consequence of this feebleness is soon seen in the turning outwards of the feet, throwing the strain on the internal lateral ligaments, which in turn become elongated through growth, and thus the defect becomes established, but the evil does not terminate here. The calcaneo-cuboid and the astragalo-scapoid ligaments losing the proper support of the tendon of the posterior tibial muscle, under the abnormal tension begins to yield, and to the deformity of eversion is added that of "flat-foot." That the above is not a mere hypothetical explanation of the ankle defects, I have many times verified by finding the threatening symptoms disappear after liberating the imprisoned muscles and subjecting the enfeebled parts to a judicious massage. Under no circumstance as is too often the case, should instrumental apparatus be applied, unless in cases where from neglect, the deformity is thoroughly established and is progressive.

Take another deformity, that of bow leg. On the earliest signs of the unsightly curve, the limb is too often trammelled with irons, and the growth of the muscles arrested, when it is well known that if manual force be systematically applied two or three times a day, the limbs will gradually assume their typical form.

Again, in further illustration of our general text, take as an example a child who for one long, or two short sessions for six days of the week sits over the study desk compelled to assume a position in which from the inclination of the body the shoulders fall forward, the head being supported, most probably, on the elbows and hands. In such a posture the great serrati and pectoralis major and minor muscles are in a state of relaxation, while the erector spinæ and trapezei muscles are in a state of tension. This change in the position of the shoulders gives the scapulæ over, without antagonism or resistance, to the action of the rhomboidei and the *lavatores angulæ scapulæ* muscles, which acting conjointly cause that projection of the lower angles of the shoulder-blades, which the older anatomists termed "*scapulæ alatæ*." To all this must be added the very important factor of four to six hours in the school-room and two hours at least of home preparation for the following day's recitations, during which time the respiratory functions having been reduced to a minimum of activity, the muscles of the chest are comparatively passive and aeration of the blood tardy. Certainly no combination of conditions could be better devised for forming contracted chests and round shoulders. It is not long before the watchful eye of the mother detects the change in the figure of her child. She will probably discover this and take alarm, even when the pale face, the languid air and the capricious appetite

of the child cause no anxiety; and then comes the second act in the drama of physical deterioration, namely, a resort to shoulder-braces and stays, in order to accomplish that which the muscles should be taught to do without restraint or incumbrance.

Lateral Curvatures.—While it is true that lateral curvatures of the spine depend upon causes both central and peripheral, yet in no small number the deformity is clearly attributable to influences of a social nature. The young column, by reason of the non-union of the epiphysis and diaphyses, and the supple character of its ligaments, is extremely flexible. Whatever, therefore, destroys the muscular equipoise, however inconsiderable the force, if persistently repeated, changes the centre of gravity and develops primary and compensating curves. For six months in the year, any fine morning groups of young children may be seen plodding along our streets with a miniature library of books suspended from one shoulder. To the already preponderating scale of the balance, add the additional factor, a probably badly arranged light, compelling these little *savants* to assume a lateral inclination of the body in order to obtain the necessary illumination of the subjects of the study, and you have all of the conditions necessary for perpetuating the lateral deformity. "Just as the twig is bent, the tree's inclined." As in the case of round shoulders, so here in order to prop up the falling column, instrumental contrivances are immediately called into requisition. The body is encased in a formidable coat of mail, to be followed by muscular atrophy and permanent distortion of one of the otherwise most beautiful pieces of mechanism in the human frame. It is true that in most educational institutions for the young provisions are made for physical culture and these are in some measure antidotal to the evils complained of, but in my judgment do not at all compensate for that free unstudied romp in the open air, untrammelled by the hard and fast rules of calisthenics, so fascinating to the young child. Nor does the evil end here. While the forcing process which is to stimulate the mental powers far beyond the real capacity of the immature and growing brain to receive is in progress another is inaugurated which is to qualify, especially the female child to acquit herself with distinction when the time arrives for entering the great world of society, or as Thomas Brown would style it, "for the frivolous work of polished idleness." The gait and carriage must be reduced to prescribed rules, the voice toned down to a drawl, or trained to move like a mountain torrent. The muscular apparatus of the face must be taught to express, not the spontaneous and natural outflow of feeling which wells up from the magic chamber of the heart, but rather to produce an effect; and so this work of transformation goes on until it culminates in the full-blown society

girl. Is it any wonder that under such a scheme of education, conducted throughout by a studied disregard of both the physical and mental constitution and exercising as it does such tremendous drafts on the nervous system, that the world is becoming filled with a class of flat-breasted, spindle-limbed young women, unfitted for the varied and responsible functions of womanhood, qualifications too, which under a different regimen and directed into proper channels would exert a most potential influence on all the great social and moral problems of the age.

While thus plain spoken on the frivolous methods of living, I do not wish to be understood as being unfriendly to the highest cultivation of the mental and physical powers if conducted on lines in harmony with the organization, nor to any technique which may conduce to personal grace or elegance of manners, so that the manly or womanly personality of the individual be not sacrificed to the Moloch of sentiment and sham. Indeed, indifference to these things is inexcusable in either man or woman, as not only lessening their influence in the world, but in many respects disqualifying them for the highest discharge of the duties of modern life. Valuable as may be the unpolished diamond, yet it is only after the wheel of the lapidary has worn away the dull incrustations that its true brilliancy is revealed and the gem is fitted to adorn the brow or the breast of beauty.

Bodily Constriction.—In the further discussion of my subject, I may next notice the evils of visceral displacement and pressure consequent on abdominal constriction. Whatever may be said in regard to Greek and Roman life, the infinite care which these people displayed in developing and maintaining the very best type of the human form is worthy of admiration. The Ionic "cheton" spoken of by Attic writers and so often represented in the bronzes of Herculaneum, while it would not exactly satisfy the modern idea of dress, was at least free from the charge of interfering with the contour of the human figure. The painters and sculptors of those classic days were reverent students of nature. The delineations were true to life. Their works furnish us with no hour-glass contractions of the human body. The constriction of the waist operates injuriously on both the supra- and infra-diaphragmatic organs. Any force acting on the base of the thorax and preventing the expansion of its walls, concentrates the function of respiration, which should be general, on the apices of the lungs, and hence under these circumstances the movements of breathing are for the most part confined to the summit of the chest. As the initial seat of tuberculosis is located at the upper part of the lungs may not the inordinate work entailed on these parts by constriction have some part in hastening such composite in the female where the predisposition

exists? It is this forcing inwards of the costal border of the thorax which causes the grooves on the anterior surface of the liver so familiar to anatomists. This pressure cannot fail to interfere with the descent of the diaphragm, and with the functions of the gall-bladder and duodenum, and exercises no small degree of influence in favoring the formation of biliary calculi, females being peculiarly prone to such concretions. The extent to which the liver may be damaged by extreme constriction of the waist, is well illustrated by a case quite recently reported in the *British Medical Journal*, in which a considerable portion of the left lobe of the liver had been separated from the right, the two being connected only by a band of connective tissue, and which enabled the operator to remove the detached mass without difficulty. The evil effects of this constriction of the viscera of the abdomen and pelvis, is most strikingly witnessed in the embarrassed portal circulation, in the different uterine displacements, elongation of ligaments, displaced ovaries, tubal inflammations, hæmorrhoids, hernia and other morbid conditions which either prevent or disqualify the woman for the exercise of those functions of maternity, and which in addition, through reflex influences, entails a host of functional disorders reaching into every avenue of the body and invading both the mental and moral constitution of the victim. So prolific have these infirmities become that a new department of surgery has been organized for their special management. To what, if not to social causes, can these morbid changes of structure in the pelvic organs, especially of the uterus and its appendages, be attributed? Why should laceration of the cervix uteri be so common an accident? Labor is a natural process and ought not under ordinary circumstances be attended by lesion of uterine tissue. I can conceive of no agency more likely to induce that muscular degeneration which predisposes to this accident than the modes and methods of modern living, especially among the inhabitants of great cities. In the expression "modern living," much is embraced. It includes culinary pharmacy, over feeding and drinking, insufficient or injudicious exercise, improperly heated apartments, and a disproportion between the hours of exercise and rest. Contrast, if you will, the muscles of the hardy country housewife, who bearing the cares and responsibilities of a dependent family, bustles about the livelong day, in-doors and out-of-doors, eats with a relish her plain and simple fare, repairs at seasonable hours to bed and sleeps the sleep of the beloved, undisturbed by dyspeptic nightmares and rising with the golden dawn resumes the round of domestic toil with a clear head and supple limbs; I say, contrast this type of a class with that of another, the woman born to luxury and ease, whose capricious and exacting taste taxes the art of the professional caterer,

who drags out the morning hours toying with some crazy piece of embroidery or trashy novel, lunches at one, rides out in the afternoon for an airing of two or three hours, returns to a dinner of five or six courses at seven, completes the evening at the opera, the theatre or the assembly, and coming home after midnight, crawls into bed weary and exhausted in body and mind, only to rise with the best hours of the morning gone, for another day of aimless routine life. Can it be doubted that in the first case, with a digestion unimpaired, with the products of textural change consumed by functional activity and eliminated through the proper excretories, the woman should possess a vital resistance and a tone of tissue altogether superior to that of the other, whose habits of living must necessarily favor their faulty metamorphosis?

To these same agencies must be attributed that brood of nervous and hysterical evils for the relief of which the gynecologist, too often I fear, invades the domain of womanhood, around which her whole sexual nature revolves, and which, save only in the direst extremity, should be sacred against all operative intrusion.

Late marriages constitute another social evil, the penal inflictions of which involve both sexes alike. Pride and luxury determine long engagements or deferred proposals. Marriage, it is believed, necessarily involves an establishment, a display, a retinue of servitors. The good old notion of two souls being united in wedlock for the purpose of being mutual helpmates, and patiently together working up from modest beginnings to affluence, seems to be entirely at variance with the modern idea of this relation. In the meantime the young man is betrayed into unlawful sources of gratification, alike destructive to moral and physical purity, the pollution of which incontinence is often subsequently communicated and perpetuated to wife and offspring. I would not dare to say how many cases of this nature have been entrusted to my professional confidence, though I doubt not my experience does not differ from that of many of my professional brethren whom I now address. It is under such circumstances that many of those infective inflammations of the Fallopian tubes, as salpingitis and pyo-salpinx, arise and which entail the most serious deterioration of health.

The Foot and the Shoe.—It may be thought by some persons that the subject of the foot and the shoe is not of sufficient dignity to appear in a public address. The Romans and the Greeks thought differently. The literature of both peoples is full of references to the shoe worn by both sexes. So important, indeed, are the feet to the well-being of the body, that whatever impairs their usefulness, either for support or locomotion, becomes a positive calamity. Nothing can be more unlike the human foot than the modern

shoe. Let any one leave the impress of his or her foot in the wet sand of the sea-shore and then place alongside of the imprint a fashionable shoe; that the two were ever intended for each other would scarcely strike a child of the forests. The North American Indian entertains juster notions about clothing this portion of his body than does the civilized denizen of New York or Philadelphia. Compare the moccasin with the shoe of the city belle. Compare the *ζανδαπλιον* or the *πεςδιχα* of Pollux or of Aristophanes with the same and we shall see that the savage and the polished Greek alike understood the value of sound feet in the race of life. It is the imperfect adaptation of the shoe to the foot which constitutes the fruitful source of tired ankles, corns, bunions, overlapping of the toes and in-growing nails. Some idea may be formed of the magnitude of the evil from the fact that of 800 patients under the care of a prominent chiropodist of Philadelphia, the great majority of the defects were entirely attributable to the high heels and the contracted toes of the shoes. Especially do these physical encumbrances arising from a blind submission to social laws operate disadvantageously to our fair women at the beginning of the new dispensation requiring both muscles and brains, and when her friends propose to sweep away all the old traditions and claim for her the earth with all its masculine employments.

Games and amusements which in themselves are proper and praiseworthy too often become developed into a craze, working both moral and physical mischief. Professor Leuf, himself a professional in the national game of base-ball, has described the pitcher's arm, a condition of over-taxed function and one in which all the anatomical elements of the upper arm are involved. There is also the tennis-arm and the swollen, supersensitive prostate of the bicyclist, both due to the abuse of popular amusements.

Defects of refraction or visual defects constitute another class of affections fairly attributable in many instances to social influences. The number of children which may be seen in our streets any day wearing glasses has become a matter of common observation. It is far from being probable that the most exquisite piece of mechanism, the human eye, came from the Divine Artificer imperfect. Because eyes are young, it does not follow that they are thereby better fitted to sustain prolonged use. Just the reverse is true, and it is high time that parents and educators begin to recognize the fact. The power of the eyes for continued use, like that of other organs of the body, is one of gradation. It moves in the general procession and strengthens with the advance in life until development has attained to its zenith. Not only so but, the eye being a part of the body, it must suffer or rejoice through the operation of general causes. A bone may have its normal curves changed, a tendon may slip from its ap-

pointed groove, or a blood-vessel may be destroyed, and yet very little disability be realized; but the eye is made up of such extremely delicate structures and acts according to such fixed physical laws, that not the slightest alteration of a curve or the mobility or density of its media can occur without great vitiation of function. To exact, therefore, long hours of study from children of a tender age, involves a degree of functional strain altogether disproportionate to the structural resources of the organ and, by disturbing the orderly processes of nutrition, gives rise to hypermetropia, asthenopia, astigmatism and its companion headache. That the picture is not too highly colored or the causation overstrained, we have only to contrast the children born and reared in those portions of the country not too much dominated by the methods of modern civilization, and who rarely demand a resort to artificial aids to provide for abnormalities of vision. The only remedy for the evil where infantile scholarship is insisted upon is the Kindergarten or object system, the most natural and effective method of impressing the young mind.

Renal Disease.—Is there any reasonable explanation drawn from sources of a social nature for the great frequency of those renal disorders which come more particularly under the care of the surgeon as crystalline deposits and calculi? For maintaining the general health at the highest physiological standard, a proper quality of food and the proper disposal of tissue waste are essential conditions. Along with wealth and luxury come the abuses of the table. Americans are fast becoming a nation of dyspeptics. Our country is so rich in the products of every zone that nowhere else in the world can you find such a variety of foods, animal and vegetable. These foods, manipulated in a thousand ways by the subtle art of the professional cook, almost necessarily betray one into excess, and also create the desire for wines and other alcoholic beverages to aid the stomach in disposing of its plethoric supply. In great cities, which furnish relatively the largest number of cases of renal disease, affecting preëminently the mercantile and sedentary classes, we find just the conditions favorable to their development. The competitions of trade keep the merchant always at white heat. Time is golden, and the street-car and other means of conveyance annihilate distance and the ride is substituted for the needful walk. A hasty lunch at the most convenient restaurant satisfies the inner man until the business of the day is closed, when, weary and worn, he is driven to his home to partake of a course dinner, the balance of the evening to be spent on the lounge with the evening paper or the latest periodical. To the literary man the fascinations of the study and the library charm him away with their siren voices from the fields and the highways, until bodily exercise grows

distasteful and repugnant. In the meantime there has been no provision made for the waste or tissue metamorphoses of the body through that great agency, exercise. These accumulate in the blood, the internal eliminating organs, of which the kidneys are chief, are overtaxed, and then follow the evils of malassimilation and of excretion, in the form of urates and oxalates, often resulting in the formation of calculi.

In conclusion, may we ever hope for a time when the race will realize that these bodies which we wear, which God has so highly honored by his own incarnation, are sacred temples to be kept in harmony with recognized physical laws, and not to be made instruments of mere animal gratification.

ORIGINAL ARTICLES.

RENAL TENESMUS:

A RESULT OF CHRONIC CYSTITIS AND URETERITIS; SUCCESSFUL TREATMENT BY KOLPO-URETERO-CYSTOTOMY AND INTRAVAGINAL DRAINAGE COMBINED WITH ELEVATION AND SUPPORT OF THE UTERUS AND OVARIES.

Read in the Section on Gynecology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY NATHAN ROSEMAN, M.D.,

SURGEON TO THE WOMAN'S HOSPITAL, NEW YORK.

I read before the New York State Medical Association, Sept. 27, 1887, a paper entitled, "Chronic Pyelitis; Successful Treatment by Kolpo-uretero-cystotomy, Irrigation of the Pelvis of the Kidney, and Intravaginal Drainage." In this communication I showed that the vesical orifice of one of the ureters could be exposed by making an opening at the ureteral angle of the trigone of the bladder on the affected side, and that disease of the renal pelvis could be treated and cured by local means. In order to catheterize the ureter and pelvis of the kidney, the anterior wall of the vagina is exposed, in the supported knee-elbow or left lateral position, by the use of my dilating speculum and perineal elevator; the upper border of the artificial opening is then elevated by means of a tenaculum, and the vesical mucous membrane containing the orifice of the ureter is thus rolled out into the vagina. In this way we are enabled to guide a flexible catheter into the ureter, and thus to avoid all injurious probing of the bladder. By injecting warm water, or a solution of bichloride of mercury (1-20,000), through the catheter with a small syringe, the pelvis of the kidney is gradually filled. Distension of the organ gives rise to a peculiar pain, which serves as a guide as to the quantity of fluid which should be injected. When the water is allowed to escape, it brings

with it pus, blood, and calcareous detritus, if these irritating substances are present. The injection should be repeated every two or three days or oftener, according to circumstances, and the irrigation continued until the washings are free from sediment.

In the paper referred to I further showed the effect of this method of treatment upon obstruction of the urethra and cystitis, which are commonly associated with the pyelitis. The opening in the bladder, by affording physiological rest and drainage of this organ and the urethra, leads to the subsidence of the inflammation or irritability of the mucous membrane of both structures, and to the atrophy of the thickened muscular walls. The bladder being thus kept continually empty through intravaginal drainage, offers no resistance to the entrance of the urine as it comes from the ureters, and there is no longer a tendency to its reflux toward the kidney during expulsive efforts of the bladder. Physiological rest and drainage of the ureters and pelves of the kidneys, as well as of the bladder and urethra, consequently follow the operation. I also described several forms of intravaginal and vulvo-vaginal drainage instruments, which, by collecting the urine in a satisfactory manner and making the patient comfortable, free, in great part, the operation from its chief objections; to wit, the presence of accumulated urine in the bladder and vagina, and dribbling from the vulva.

At this time I had treated two cases of pyelitis, both of which were cured. I have since done kolpo-cystotomy and kolpo-uretero-cystotomy eight times.² Having thus a ready means of access to the bladder, ureters, and pelves of the kidneys, I have learned, by observation and experiment upon the living subject, some new and important facts concerning the diseases of the upper urinary organs in women.

Anatomy and Pathology.—In presenting the results of these investigations, I have selected as my subject "Renal Tenesmus," a frequent result of chronic cystitis and ureteritis, in contradistinction to pyelitis, the usual result of urethrocele, cystitis, and ureteritis. It is the most characteristic symptom of the class of cases of which I wish to speak. I have chosen this symptom rather than a pathological condition, as I wish to make it prominent, because it is the first and frequently the only indication of the gradual extension of urethral and vesical disease to the ureters and pelves of the kidneys. From the peculiarity and wide range of the group of symptoms embodied in the use of the term renal

¹Transactions New York Medical Association, vol. iv., 1887. American Journal of the Medical Sciences, March and April, 1888.

²I have now performed thirteen operations in all, combined with intravaginal drainage—two of kolpo-cystotomy, and eleven of kolpo-uretero-cystotomy. Two of these operations were for urethrocele and cystitis, one was for left pyo-nephrosis with dilatation of the ureter, one for left pyelitis with sacculization of the ureter, three were for pyelitis with dilatation of the ureter, and five for renal tenesmus, without dilatation of the ureters, or pelves of the kidneys.

tenesmus, it is liable to be confounded with pyelitis, with which it is closely allied. I mean to designate by this term a distinct manifestation of morbid irritability, without pathological evidences of inflammation other than that of pain. The distinction between it and pyelitis, resulting, to a certain extent, from like causes, cannot, I conceive, be too sharply drawn.

Here, as in other parts of the body, the progress of disease is inward—from organs communicating directly with the exterior of the body, and exposed to injurious influences from without to those in more sheltered positions in the interior. It is true that an abnormal condition of the urine sometimes leads to the formation of renal calculi, or the ureters and pelves of the kidneys may be pressed upon by abdominal tumors, be the seat of a new growth, or be implicated in disease of neighboring organs, and in these conditions renal tenesmus may occur as one of the symptoms; but as I have approached its study from the urethra and bladder, I will at present consider it only in its relations to disease of the upper urinary passages following affections of the urethra and bladder.

That an inflammation of the mucous membrane of the urethra and bladder should extend to the vesical extremity of one or both ureters is not surprising. The mucous membrane lining the ureters is continuous with that of the bladder, and the ducts traverse the vesical wall for an inch and a half. It is therefore probable that in an acute cystitis, preceded or not by urethritis, the vesical part of the ureters rarely escapes. As a rule, when the inflammation of the bladder subsides the ureteral mucous membrane returns to a normal condition. But if urethrocele should co-exist, or the walls of the bladder should become hypertrophied, or there should be distortion of a ureter arising from the pressure upon it of a displaced uterus or ovary, or both, or of pelvic growths of any kind; why, then, the disease of this portion of the duct is not only liable to continue, but it will sooner or later extend to the pelvis of one or both kidneys, under the form of pyelitis, or of renal tenesmus.

Cystitis more or less localized in the base of the bladder, complicated by ureteritis, is a more obscure but highly interesting condition. The cystitis commences as a local or general inflammation, and afterward becomes confined to one locality in consequence of the retention of residual urine due to sacculation of this part of the bladder. Pouches in the base of the bladder may result from irregular thickening of its muscular coat or from distortion of the vesico-vaginal septum, in consequence of the presence of cicatricial bands and contractions in the vagina, or, as I have more frequently observed of late, from fixation of the uterus in an abnormal position. There is frequently, in these latter cases, lateral

displacement of the uterus, and the cervix is drawn upward and outward toward one or the other side of the pelvis, carrying the vesical wall with it, and becoming there more or less fixed. In this way is produced a funnel-shaped pouch, the apex of which corresponds to the attachment of the cervix to the bladder. A fold in the vesical wall also occurs in cases of backward displacements of the uterus, especially in well-marked retroflexions with inclination of the fundus to one or the other side of the pelvis. The bladder is attached to the anterior aspect of the cervix uteri along a line about an inch in length. When the fundus uteri sinks into Douglass' cul-de-sac and the utero-vesical pouch of the peritoneum is thus effaced, the highest part of the attachment of the uterus to the bladder is drawn backward, the lowest is displaced forward by the cervix, and the superior wall of the bladder approaches the base. In this way, instead of the regular and rounded form of the cavity of the bladder, at this point is produced a more or less acute angle, the apex of which corresponds to the highest point of the utero-vesical attachment, and consequently the deepest and narrowest part, to the side toward which the uterus is inclined. Frequently, these folds and distortions of the vesical walls are very distinct, and the artificial opening in the bladder, the result of the operation of kolpo-uretero-cystotomy, affords an excellent opportunity for the study of the mechanism of their production. One of the ureters may empty into a pouch produced in some one of these ways, and thus the inflammation may extend to its lining membrane. The distortion of the bladder at this part also favors the reflux of urine into the duct during expulsive efforts. Fixation of the uterus also, even when the organ is in a normal position, by interfering with the mobility of the bladder, prevents its easy and symmetrical dilatation by the urine and the complete evacuation of its contents. These influences must be studied all the more closely, because, although great irritability of the bladder and renal tenesmus exist, sometimes there is no pus in the urine, and at others only a very small amount. Exacerbations, however, occur, especially during the menstrual periods, when the inflammation extends to the entire vesical mucous membrane and the urine contains large quantities of pus.

Ureteritis may remain localized in the vesical portion of the ureter, or the inflammation, from an increasing urethral, vesical, or uterine lesion, may extend upward and involve the pelves of the kidneys. In my experience this extension is either preceded or accompanied by dilatation of the ducts. When I have opened the bladder and exposed the ureter, in those cases where the inflammation was confined to its lower part, the lumen of the duct was contracted in consequence

of thickening of its coats or of morbid irritability in its entire extent, associated with uterine and ovarian displacements, which there is reason to believe are almost, if not always, present under such circumstances. In the cases of pyelitis which I have treated, on the other hand, associated also with uterine and ovarian displacements, the ureter was considerably dilated. The cause of the dilatation of the ureter and at the same time the extension of the inflammation is, as I believe, the reflux of the urine bearing septic material from the bladder, arising mainly from the increase of obstruction in the urethra to the outflow of the urine. Thickening and narrowing of the urethra, distinguishing features of urethrocele, by necessitating forcible efforts of the bladder to expel its contents, lead to concentric hypertrophy of the muscular coat and increase the strain upon the ureters, thus causing pyelitis. Partial or general thickening of the muscular fibres of both these structures, the result of overaction in irritable bladders arising from recurrent attacks of cystitis, produces the same effect by increasing the power of the contractions of the bladder. At the same time these contractions occur with greater frequency and longer duration, thus leading to renal tenesmus, as I have observed it in connection with the various forms of uterine and ovarian displacements just described.

Classification.—Now, from the foregoing anatomical and pathological considerations, the chronic inflammatory affections of the female urinary passages may properly be divided into four classes, namely: 1, Urethritis; 2, cystitis; 3, ureteritis; 4, pyelitis. The progress of development is from without inward, and the order of occurrence, as I believe, is the one enumerated.

Urethrocele and Cystitis.—The following extract from a paper³ I read before the Medical Society of the State of New York, will show the scope of my views upon urethritis and cystitis at that date, and will serve at the same time to connect these views with those I at present entertain upon the pathology and treatment of the chronic inflammatory diseases of the upper urinary passages belonging to the third and fourth classes of our division, namely, ureteritis and pyelitis to be referred to again:

"The starting-point of urethral and vesical lesions in the female is to be sought in the lower half of the urethra, closely related in front with the triangular ligament and blending behind with a spongy erectile tissue of the vagina.

"The calibre of the urethra may be transiently narrowed by congestion of its mucous lining, or permanently narrowed by infiltration of coagulable lymph into the underlying cellulo-elastic tissue, which constitutes properly the so-called

organic stricture, as in the male, and which, however seldom met with, is liable to the same sequences.

"Infiltration into the spongy erectile tissue outside the urethra, by plastic lymph, is, I believe, by far the most common beginning of the morbid process, whatever be the cause that produces it. This interrupts the stream of urine, either by encroaching on the calibre of the urethra, or by deflecting it beneath the triangular ligament, both cases being attended with more or less dilatation above.

"The next step in sequence is increased functional activity of the urethral muscular coat in overcoming the obstruction to the flow of urine. The result upon its structure is hypertrophy, and this will be of the eccentric type, thickening the urethral walls, while enlarging the calibre. Hence the ease with which large catheters of a proper curve pass at all stages of the disease. False and true hypertrophy here coexist. The true hypertrophy increases *pari passu* with the muscular contraction, and is followed by still greater distortion of the canal at an angle more and more acute as it turns the triangular ligament, and with corresponding contraction of its walls at that point. This mechanical impediment below coincides with the increased weight and volume of the stream of urine above, to put the walls of the urethra on the stretch in the upper part of its course.

"Thus is gradually formed the urinous tumor, which drags down in front the adjacent vaginal wall, appearing as a prolapsus between the nymphæ, and filling up the ostium vaginae.

"The looser attachments of the urethra to the vagina in the upper part of its course facilitates this result. Such is the condition of the parts to which I apply the term *urethrocele*. Often confounded with cystocele, it is really distinct.

"The arrest and retention of but a few drops of urine, at first, goes on until this may amount to a teaspoonful or more. It is then decomposed in this pocket, becomes alkaline, and by its irritation provokes congestion of the urethral mucous membrane. This congestion, extending to the vesicle trigone above, will bring white glairy mucus into the urine with vesical and rectal tenesmus. Causes favoring this extension are errors in diet, overexertion, and excessive coition. Acute cystitis resulting, first complicates the urethrocele, and is more or less decided according to the gravity of its determining cause. After a few days the active congestion disappears or subsides, with the vesical symptoms, leaving the urethrocele persistent. A few days, or weeks, or months afterward, similar provoking causes, even slighter than at first, will reproduce the congestion, while extending its area, with a corresponding increase of the severity of all the symptoms. . . . Finally, chronic cystitis overshadows the primitive urethrocele,

³Urethrocele, Catarrh, and Ulceration of the Bladder in Females. See Transactions for 1871.

although this still contributes to exacerbate the long and frightful train of evils.

"The vesical mucous membrane seems to possess almost boundless susceptibilities of irritation, and the higher this ranges, or the greater the area congested by contact with ammoniacal urine, the more is the subjacent muscular coat excited to contractions of abnormal force and frequency. Hence hypertrophy, increased congestion, blindly seeking relief by increased mucous secretion, and more active fermentation of the urine, deposits of its ammonical magnesian phosphate, sometimes hæmorrhage into the bladder, blood extravasated into the submucous cellular tissue, or abscesses formed there.

"This hypertrophy of the concentric type, although apparently slight in the mucous coat, is more serious in the muscular coat, whose efforts to overcome the urethral impediment and rid the bladder of its acrid contents, keep it growing until it reaches an inch or more in thickness. Autopsies reveal upon its inner surface fascicles of muscle like the interior of the right ventricle of the heart. Its color is deepened by the increase of venous blood in its retarded circulation, and its consistency softened by the same cause. The circular and spiral muscular fibres of the upper urethra are also hypertrophied and overcome the former dilatation of the canal, thus converting the eccentric into concentric hypertrophy of the urethra, which has become firmer to the touch, while its urinous tumor is less defined.

"From the earliest period of vesical hypertrophy, the congestion of the mucous membrane occasions thickening with an œdematous feeling in the bas-fond, and the contraction of its pliant walls under this irritation is even greater than is possible after they have been straightened out and expanded by progressive thickening. The vesical cavity, moreover, is reduced by the pressure of the anteverted womb upon its superior fundus, which at this early stage gives it a somewhat cylindrical shape.

"On the vagina, the effects of a hypertrophied bladder are seen in the increased firmness of the vesico-vaginal septum, and the congestion and hyperæsthesia of its mucous membrane.

"Ulceration initiates the destructive stage of subacute inflammation or chronic catarrh of the bladder. It will be superinduced by the excessive hyperæmia of small or large patches of membrane, especially at the trigone and bas-fond, and by extravasations of blood into the submucous cellular tissue, caused probably by rupture of minute veins at the time of strong muscular contractions. In either event the mobility or pliability of the mucous membrane is lessened or destroyed by the inflammation which has reached its acme, and which now terminates in sloughing of the membrane (gangrene) perhaps to a very limited extent, or by an abscess opening through it into the blad-

der. It is also to be considered that the mucous membrane, rendered friable by previous inflammation, and thrown into irregular folds, may tear when it can no longer stretch under the powerful grasp of the hypertrophied muscular coat. This accident will occur the more readily on account of the anteverted position of the womb, which, I believe, always exists, and the pressure of which may explain the greater proneness to extensive ulceration of the female bladder, as averred by our morbid anatomists."

Treatment.—In further consideration of the methods and objects of physiological rest, I am led to regard all four of the inflammatory diseases of the urethra, bladder, uterers, and kidneys named as so many stages of the same pathological process. In short, if it were possible to cure the initial acute inflammatory lesions of the urethra and bladder, which rapidly become chronic, before the more internal organs are involved, the diseases of the ureters and pelves of the kidneys, thus arising from continuity of structure, might be almost, if not entirely, avoided. Hence the great importance of recognizing early commencing urethrocele and cystitis, and treating them promptly, for, if neglected long, the upper urinary passages will surely suffer sooner or later in the order of sequences previously indicated.

Kolpo-cystotomy.—Kolpo-cystotomy, to secure physiological rest of the urethra and bladder, is undoubtedly the operation indicated for the relief of cystitis coexisting with urethrocele when the ordinary remedies at our disposal have failed; not dilatation of the urethra, nor an artificial opening between the canal and the vagina, expedients at best of questionable utility.

In the early stage of urethrocele, in which there is sacculation of the canal and retention of urine, I advocated on theoretical grounds, in the paper just quoted, the establishment of an opening into the canal from the vagina, a procedure which I called "tapping of the urethra;" but I soon saw that the practice recommended possessed no real merit, for the reason that the relief of the urethra afforded by such an expedient would confer little or no immunity upon the bladder against the extension of the inflammatory process to its cavity, and I therefore gave up the idea. Dr. T. A. Emmett proposed a similar operation on the urethra, several years later, which he called "button-holing of the urethra," but from what I have seen of the bad results of this procedure in cases which had been subjected to it by his followers, I would not be inclined to recommend it, for the reason that, when drainage from either the urethra or bladder or both is required, it should be established through an opening at a favorable point in the vesico-vaginal septum, where the opening afterward can be more easily closed, and injury of the functions of the urethra be entirely avoided. A large opening made here gives relief to both

urethra and bladder by putting them in a state of physiological rest, and while they are being thus cured the ureters and pelvis of the kidneys are guarded against further strain and the risk of commencing disease.

The practice of making an opening into the bladder as a means of treating cystitis is itself of comparatively recent origin, but it is recognized generally by the profession as of great practical value. It has, however, been restricted in its employment for the want of suitable forms of intravaginal drainage, by which alone the beneficial and legitimate results of the procedure can generally be obtained. I was the first in this country, as I believe, to treat successfully chronic cystitis by kolpo-cystotomy, which I did in my private hospital in New Orleans, in 1861. My first case was one of ulceration and concentric hypertrophy of the bladder coupled with urethrocele. The mucous coat of the bladder was thickened and redundant, and had a low grade of vitality. It was exposed to great tension on account of the violent and irregular contractions of the muscular coat. From its friable condition, no doubt, it readily became fissured and ulcerated, as was shown by the very minute disintegrated particles discharged through the urethra, which I recognized from time to time with the unaided eye. The same pathology and mechanism of the walls of the bladder will serve to explain the occurrence of gangrene and perforation, not only of the mucous but of the muscular coat as well, in bad forms of recurrent cystitis, a case of which I could here cite if time permitted.

The very large opening, nearly the size of a silver dollar, which I finally made in the vesico-vaginal septum of my case referred to, afforded full and free vesical drainage, and within one year all the diseased structures were completely cured by it, and the artificial fistula closed. The cause of failure to get the good effects of this procedure, in the hands of most surgeons who have employed it since, I am convinced, is because they do not make a sufficiently large opening in the bladder.

To illustrate some of the important objections to the latter practice I will cite here a typical case—Mrs. S—, of Ohio, aged 32, who recently came under my care—in which the initial stages of urethrocele and cystitis were completed after six years, with the development, as is believed, of ureteritis in the right side in the regular order of sequences. The operation of kolpo-cystotomy was performed by one of the ablest gynecologists of New York, but, notwithstanding his acknowledged skill, the disease was only ameliorated for a time, resulting no doubt from the smallness of the opening he made and his failure to secure perfect vesical drainage. The patient, in spite of his kolpo-cystotomy, after five years of further development of sequences (April 11, 1888) was ad-

mitted into my service in the Woman's Hospital, presenting all the terrible consequences of renewed and perpetuated sufferings, with blighted hopes and ceaseless dread of death from unknown causes. I found the fistula made for drainage five years before, situated a little to the right of the median line and very near the cervix uteri, a mere longitudinal slit through the thickened and contracted vesico-vaginal septum. It would about admit a No. 10 bougie, and through it protruded a small knuckle of the thickened vesical mucous membrane. The urethra had gone through all the stages of urethrocele, from an attack of urethritis occurring four days after marriage, and the bladder was in a state of concentric hypertrophy with a retaining capacity not exceeding three ounces of water. The patient says that she did not experience any real benefit from the operation she underwent until about six months afterward, when she got out of bed and began to walk about, attributed properly by her to a free escape of the urine, in obedience, of course, of the law of gravity. The most of the symptoms in her right side, from this time on continued to improve. But this amelioration of her sufferings was only of short duration. Pains soon began in the left groin and lumbar region, and they radiated down the thigh to the knee and foot, and came on in paroxysms not unlike those of renal colic. At the end of three years (two before admission into the hospital), though relieved almost entirely of her sufferings in the right side, the paroxysms of pain in the left had already become more frequent and severe in character, which were often followed by free discharges with the urine of thick and offensive pus. This condition of things continued to grow worse and worse until she entered the hospital. She had a bad form of retroflexion and fixation of the uterus. Notwithstanding her varied sufferings of eleven years' standing, greatly aggravated no doubt from the last-named cause, I found her to all appearances in a state of robust health. But she was nervous and unable to sleep, results no doubt of the increased frequency and severity of the pains in her urethra, bladder, and left side, combined with the irritating effects of the constantly escaping ammoniacal urine. The treatment I proposed in the case was the correction of the displaced uterus and the successful establishment of intravaginal drainage, two most essential steps, I conceived, and without which I did not think it possible that any good could be accomplished toward the relief of the sufferings described.

Here the pathology and obstacles to perfect vesical drainage were not unlike those usually found in certain forms of chronic cystitis in the male subject, resulting from old strictures of the urethra, and enlargements of the prostate gland. These two diseases, as is well known, bear a direct relation to dilatation of the ureters and surgical

kidneys, which are usually rapid and certain in their developments; but they are no less constant and uniform in the production of their sequences than were found to exist in the case just cited, resulting from urethrocele and cystitis.⁴

⁴ June 30th. Progress proved necessarily slow in my first efforts to restore the displaced uterus and establish satisfactory drainage, owing to the greater immobility of the organ, and consequently the greater angle to be overcome in the adjustment of my utero-vesical support than I supposed in the outset of the treatment. Notwithstanding these obstacles, however, and the restiveness of the patient, the gradually increasing mobility of the uterus and the daily improved state of her health encouraged me to persevere.

Matters thus went on until finally I became convinced that the old fistula, from the smallness of its size, and the partial closure of it nearly all the while by the existing test-like protrusion of the vesical mucous membrane, were obstacles even more grave than those just mentioned. These obstacles, to my mind, accounted for the former persistency of the pains in the right side, and afterward the renal colic-like pains in the left. A more minute and careful examination at this juncture of the pathological anatomy of the vesico-vaginal septum, especially in the locality of the vesical orifice of the left ureter, fully confirmed my impression upon these points. Here I found the area of the structure contracted down to one-fourth at least of its original dimensions. It was thickened in about the same proportion, hard, resisting, and exquisitely sensitive under pressure of the finger and depressor. From this further study of the parts, I thought it possible that, from the incompleteness of the relief—after the operation of kolpo-cystotomy five years before—the hypertrophy of the muscular coat of the bladder had itself not only gone on increasing in the locality indicated, but that the original cystitis had been followed here by ulceration of its mucous coat as well, thus causing in this way abnormal relations of the parts, and mechanical obstruction to the outflow of the urine from the corresponding ureteral orifice. I, therefore, decided to perform left kolpo-uretero-cystotomy, in order to give a direct outlet to the implicated ureter, which I did in the supported knee-elbow position, on April 27th, in the presence of several physicians and the house-staff of the hospital. I made as large an opening as the restricted limits of the diseased structures would permit, leaving a longitudinal strip of tissue between the old and new openings, the breadth of the index-finger. I found the thickness of the structures fully five-eighths of an inch, and an artery in the upper border of the opening that spouted blood almost equal to a divided radial. Only by the quick application of a long pair of compression-forceps was the patient saved from excessive loss of blood. The orifice of the imprisoned ureter could not now be discovered, nor could the morbid changes of the muscular and mucous coats of the bladder under the newly-made opening be carefully examined, owing to the free oozing of the blood. Suffice it to say, that a few continuous catgut sutures in the border of the fistula at the bleeding points, and the application of a small pad moistened in a 20 per cent. solution of subsulphate of iron, controlled effectually the hæmorrhage. In this way I put the patient in the best possible condition for renewed progress in treatment by intravaginal drainage, combined with elevation and support of the uterus. As might have been expected from a fresh wound in the parts, there was for eight or ten days considerable increase in discomfort of the patient, arising mainly from flooding of its raw edges with alkaline urine. But, nevertheless, the cavity of the bladder under the new order of things soon began to enlarge, and the thickness of the vesico-vaginal septum to perceptibly diminish, thus showing that the mucous coat of the bladder had not undergone ulceration. It was not until June 3d, thirty-six days after the operation, could I find the affected ureteral orifice, and explore the tube up to the pelvis of the kidney. This I did first with a delicate probe for a few inches, and then with a French catheter, No. 8. The result was the escape through the catheter of 10 drachms of pus and urine, white, thick, and cloudy, from a point not exceeding one inch and a half up the ureter. The pelvis of the kidney and ureter were then irrigated with a solution of bichloride of mercury, 1-20,000. Again, June 5th, two ounces of a similar fluid were drawn off from a point about the same height in the ureter, containing a larger amount of pus and albumen with acid reaction, and specific gravity of 1.019. This exploration showed that when the eye of the catheter was carried into the pelvis of the kidney and irrigation commenced, it had to be withdrawn three inches from the kidney before the fluid would begin to run through it, thus proving that the sacculation was not in the pelvis, but low down in the ureter. Still again, on June 8th, with the same precautions of introducing and withdrawing the catheter through and back to the dilated portion of the ureter, three ounces of fluid of the same character were taken away, and irrigation made. The fluid drawn off this time was acid, contained pus, epithelia, and some albumen, but no casts or crystals. The catheter, now left in the ureter five hours, showed that the secreting capacity of the left kidney was equal to, if not greater than, that of the right. The temperature next day, accompanied by nausea and vomiting, rose to 103.5° F., but it gradually came down, and the irrigation was resumed, though at longer intervals. The improvement of the parts was slow but progressive to the date of this note, when the patient left the hospital to return home to recuperate her strength for future treatment, when the hospital opens in the autumn.

Remarks.—The facts brought out in this foot-note, scarcely need I say, all tend to prove the correctness of my statement in the outset, namely, that the opening in the bladder made by the surgeon who first treated the case was too small, and that to his imperfect vesical drainage is properly referred the continued development and pro-

gress of the diseases which I have found to exist in the upper urinary passages. They also forcibly illustrate the development in the same case of all four of the classes, or stages, previously described. Thus have I diagnosed in this case sacculation of the left ureter, with obstruction just above the orifice to the outflow of the retained secretions, without perceptible disease of a serious nature in the corresponding kidney, resulting from concentric hypertrophy of the muscular coat of the bladder, and constriction within its grasp, probably, of the corresponding portion of the affected ureter. Whatever may be the final result of the treatment in the case, now cut short for three months, I can at least claim thus far that a correct diagnosis has been reached, and that the domain of gynecology in this direction has been extended. It remains yet to be seen what the exact limit of such work in this new field of investigation may be, and how much further general surgery can be depended upon for the relief of such sufferings by the sacrifice of an endangered or diseased kidney, approached from the opposite direction through the resources of lumbo-nephrectomy.

One is here naturally led to ask, of what value or practical use would attempted catheterization of the ureter for diagnostic purposes have been in such a case, made through the urethra with dilatation, or, as to that matter, "free handed" without dilatation, for which it has been claimed that dexterity and supreme skill are all-sufficient? For my part I answer that it took me thirty-six days to find the ureteral orifice, and I had the advantage, too, of a window in the vesico-vaginal septum, through which I could examine and study well the inside of the bladder. I possessed in the procedure also a ready method for treating the existing inflammatory lesion in the ureter, besides being able to guard against acute attacks of cystitis.

(To be concluded.)

THE ANTIPYRETIC, AND THE ABORTIVE TREATMENT OF TYPHOID AND REMITTENT FEVERS.

Read before the Wisconsin Medical Society, June, 1888.

BY J. R. BARNETT, M.D.,

OF NEENAH, WIS.

CHAIRMAN COMMITTEE ON PRACTICE OF MEDICINE.

The search for specifics is as old as the history of medicine. From the time of Hippocrates down to the present, the highest aim of the physician has been to shorten disease by as many days as possible; to arrest, if possible, the law of its natural evolution, or so amend it as to rob it of its chief inflictions, if not its final penalty. Through all the ages it has been a hunt in the dark, the chances of success and failure being as one to infinity. Hence the alluring pursuit of the older chemists after the panacea—some substance or compound which was to fit all cases and cure all diseases. A growing knowledge of pathological

progress of the diseases which I have found to exist in the upper urinary passages. They also forcibly illustrate the development in the same case of all four of the classes, or stages, previously described.

Thus have I diagnosed in this case sacculation of the left ureter, with obstruction just above the orifice to the outflow of the retained secretions, without perceptible disease of a serious nature in the corresponding kidney, resulting from concentric hypertrophy of the muscular coat of the bladder, and constriction within its grasp, probably, of the corresponding portion of the affected ureter.

Whatever may be the final result of the treatment in the case, now cut short for three months, I can at least claim thus far that a correct diagnosis has been reached, and that the domain of gynecology in this direction has been extended. It remains yet to be seen what the exact limit of such work in this new field of investigation may be, and how much further general surgery can be depended upon for the relief of such sufferings by the sacrifice of an endangered or diseased kidney, approached from the opposite direction through the resources of lumbo-nephrectomy.

One is here naturally led to ask, of what value or practical use would attempted catheterization of the ureter for diagnostic purposes have been in such a case, made through the urethra with dilatation, or, as to that matter, "free handed" without dilatation, for which it has been claimed that dexterity and supreme skill are all-sufficient? For my part I answer that it took me thirty-six days to find the ureteral orifice, and I had the advantage, too, of a window in the vesico-vaginal septum, through which I could examine and study well the inside of the bladder. I possessed in the procedure also a ready method for treating the existing inflammatory lesion in the ureter, besides being able to guard against acute attacks of cystitis.

conditions and of the physiological resources of the system for their removal, notably by cutaneous, renal and intestinal excretion, threw some light upon the search, and so it went on, and as the centuries went by, though hardly with them, one by one a specific was found, and for this malady and then that a revision of prognosis had to be made, and a rewriting of its mortality tables had to be attended to.

Scientific medicine has seldom disdained to join in the chase empiricism led blindfolded; not always discovering more with her open eyes than empiricism would stumble upon in the dark; but she has oftener been content to accept the dictum that most maladies are self-limited and essentially unalterable in their evolution, and that medical treatment is powerless to do more than mitigate their severity.

But of late years a new science has propounded to medicine a new problem. Bacteriology has come to the aid of the pathologist and, by revealing causes of disease hitherto only dimly surmised, has not only sanctioned the old pursuit of what often seemed a chimera, but has led it into wider fields and for larger purposes. It has also imposed new responsibilities. It is not enough now to cure the sick man, or help him to survive his sickness. It is demanded that the specific cause be determined at the outset and stamped out before the germ has taken root; or, when this is impossible with the existing knowledge of pathological microorganisms and their appropriate germicides, the alternative is suggested, when practicable, of so sterilizing the soil in which they have implanted themselves as to inhibit their development, or, again, of rendering innocuous to their host the cadaveric substances their life, development, death and decay have engendered.

It is not necessary to point out the eagerness with which the medical profession has entered upon the solution of this problem, which the success of surgical antisepsis seemed to promise as so easily practicable; but it is certainly not reassuring to contemplate the wide differences in results. Still, it is well to reflect that medical antisepsis has its limitations which surgical has not. The latter is purely local in its purposes, being addressed only to the open wound, which alone is vulnerable to the attack of the surgical microbe, and which will bear without danger the presence of antiseptic agents which, if introduced into the general circulation, would prove speedily fatal. Without this limitation imposed by the paramount consideration of the patient's safety, it is highly probable that most, if not all of the specific diseases would have an aborting remedy in corrosive sublimate, or carbolic acid, or iodine, not less sure in result than they prove in the field of surgery. And with this limitation, their effect upon the normal evolution of some diseases is such as to entitle them, with few qualifications, to the name of specifics.

Standing easily first in the interest of the profession in the search for a practical and reliable germicide is typhoid fever. This would be expected from the wide diffusion of the disease over both hemispheres, and its great fatality. More than this, the universal acceptance of the doctrine of its bacillary origin has afforded a common ground on which all investigators can work in harmony to a common purpose. It is true all are not agreed as to the identity of this specific microorganism; nor is it essential that they should be. There is no reason to believe that these organisms differ so widely in their resistance to germicides that the practical physician should be called upon to declare his adhesion to Klebs and his *bacillus typhosus*, or to Wernich and his evolutionized *bacillus subtilis*, or to any other bacteriologist possessed of any other bacillus. It is enough for him to know that some specific germ gains access to the circulation—some microbe develops, multiplies and dies; profoundly affecting the vital forces by its existence within the system, or by the products of its own vitality, or its own dissolution. This affords the basis for a rational search for some antidote to the disease—that is, for some agent inimical to the existence or development of the microorganism, or eliminative of the products of its vital activity and decay, or both. And so, upon this belief upon some infecting microbe as the cause of typhoid fever, has been built the goodly edifice of specific treatment as it stands to-day. The calomel of Ziemssen, the iodine of Prof. Davis, the carbolate of iodine of Bartholow, the bismuth salicylate of Desplats, the ammonium salicylate—and even corrosive sublimate, claim attention here—all embody the common aspiration for some remedial agent as hostile to the bacillus of typhoid as is the sublimate to the micrococcus of wounds.

Fairly a part of this treatment, though falling short of its entire scope, may be reckoned antipyretic and local antiseptic medication; the former with the view of lessening tissue metamorphosis—though some count this as only an incident of a general antisepsis—the latter with the view of disinfecting the contents of the intestinal canal, poisoned both by the products of intestinal excretion and glandular and epithelial detritus thrown off by the ulcerated Peyer's patches, and liable to a reabsorption into the general circulation.

Remotely allied to the former is the abstraction of surface heat by the protracted cold bath—happily in disuse in this country, and cool or tepid sponging of the surface. The typical antipyretic remedies are antipyrin, antifebrin and the salicylates, and the customary choice of them is probably in the order in which they are named, with a growing partiality for antifebrin. This and its older relative have somewhat revolutionized the hospital treatment of typhoid fever throughout America and Europe, and, conjointly with proper

eliminants and stimulants, may be said to constitute the hospital plan. Judging it as such, it should be considered with the respect due such authority. As such, perhaps it is the best that the existing state of knowledge admits of. But judging of the respective merits of different lines of practice proposed upon anything less than a comprehensive view of all the conditions involved would be liable to lead to wrong conclusions. That it has led to wrong conclusions and to wrong methods in general practice seems to me quite certain. Typhoid fever is almost *sui generis* in this, that its proper hospital treatment affords no safe criterion for the guidance of private practice. More than any other disease it has its distinct epochs, which claim distinct consideration. It is the usual fortune of the hospital to receive its typhoid patients after the great therapeutic opportunity has passed for good; that is, after the epoch of glandular infiltration and ulceration has been attained. Here abortive treatment is out of the question, and no thinking physician would attempt it, realizing that now only the resources of expectancy remain. Not the expectancy of inaction, for its resources are as specific and defined as any agency for the abortion of the fever; nevertheless, that expectancy which admits the impossibility of shortening its course. What remains to it now is to retard tissue change, and thereby restrain excessive heat; the promotion of elimination through all the available emunctories; disinfection of the contents of the bowels, and nourishment and stimulation, to carry the patient to a more or less remote convalescence.

The mistake of general practice is to imitate this treatment from the beginning to the end of the malady, thereby not only missing the chance of aborting it, but positively adding to its dangers by the too prolonged exhibition of antipyretics by no means harmless when restricted to the shortest possible period.

For intestinal disinfection and elimination, and even for general antiseptis, calomel seems to be growing again in favor; though there are many who hail its renaissance with great satisfaction who do not accept the opinion of Ziemssen that it is the only remedy deserving the name of specific. But calomel was a standard and, with many, the only remedy, long before the bacillus of typhoid was discovered, or a germicide and antiseptic treatment conceived of; and the elder practitioners, who remember the failures and disasters which, by their own confession, overweighed its benefits and at length determined its abandonment, will be slow to believe that a new-found bacillus can rehabilitate an oldtime discredited remedy, even if it prove to be a germicide. These may give it a subsidiary place in the treatment of expectancy, but they will look for specifics among agents which, whatever their promise as microbicides, are happily without a history as

odontocides, and are fairly above the suspicion of homicide.

If some, to whom this record of past failure and disappointment is not a personal reminiscence, should resort to calomel for its specific results, they would doubtless do well to follow the example of Liebermeister, Traube, and others equally conservative, and limit the dose to 8 or 10 grains daily, for three or four days only.

The great importance of the subject demands a further reference to a point to which allusion has already been made: the danger attending the use of antipyrin and antifebrin in private practice. Admitting that in hospital practice, where the patient is under constant supervision, this danger is so slight that it can be disregarded, I believe that where his environment is less favorable, and especially where his remoteness from medical aid leaves him to the chances of the daily or less frequent visit of his attendant, the routine use of either of these remedies, in doses at all adequate, would be attended by a peril, both near and remote, out of all proportion to the benefits expected from them. Whether or not, as claimed by many, they produce changes in the crisis of the blood, and even in the parenchyma of organs, more or less permanent, certain it is they produce temporary conditions of grave and alarming significance, and with a suddenness no ordinary prudence can forestall. Sudden cyanosis and collapse are occasional results common to both, and these phenomena have been reported by competent observers so many times that to disregard these repeated warnings is, to say the least, censurable.

The effects of antifebrin have been scrutinized with especial care, both from the standpoint of the clinician and the pathologist, and the verdict of the profession seems to be stated by Dr. J. Solis-Cohen when he says that it is much more dangerous than antipyrin. He goes so far as to say that when even the small dose of 3 grains is given in a case of typhoid, the patient should be revisited in an hour, and before another dose is given. But he has the further objection to it that, while permitting a frequent and sudden rebound of temperature, it does nothing, on the other hand, to shorten the course of the disease.

Dr. F. M. Bauer, of New York, has several times seen cyanosis follow three or four $\frac{1}{4}$ gram doses, and Dr. Doll, of Berlin, describes a case characterized by extreme pallor and coldness of the surface, rapid respiration and violent heart-beat, general numbness and final unconsciousness, from a small but unknown dose; the patient recovering the next day.

Prof. Bokai, of Klausenburg, has determined, after a long series of experiments, that an 0.5 per cent. solution of acetanilide, with 0.6 per cent. solution of salt, dissolves the red corpuscles of the blood in man, the rabbit and the dog; and he is of opinion that this occurs in some degree in life,

when the drug is given in medicinal doses. This, he thinks, partially accounts for the diminished production of heat; but this is determined more by the paralysis of terminal nerve filaments and of the muscles themselves, and when this paresis affects the muscles of respiration, cyanosis follows.

Herczel's researches, both experimental and clinical, led to the discovery of profound changes in the blood. Under large doses the blood of dogs became reddish-black, and gave evidence of the presence of methæmoglobin, hæmoglobin being diminished 10 to 18 per cent. Also, a quantity of dissolved coloring matter was present in its serum, while its alkalinity was somewhat reduced. The clinical results correspond. Many of the phenomena of aniline poisoning attend its use, and if this is continued four to six weeks, in quantities of 30 to 45 grains daily, the dissolution of the coloring matter of the blood becomes quite manifest.

Dujardin-Beaumetz arrives at similar conclusions, both from his own observations and the experiments of others. He remarks that "the toxic effect of acetanilide seems to be to rob the blood little by little of certain principles essential to calorification, causing thus a progressive refrigeration which is incompatible with life." He cites the investigations of Lepine and Weill to prove this, but admits that the latter took 4 grams at once without any obvious effect whatever. Nor does he overlook the changes in the crisis of the blood already alluded to, pointing out that *pari passu* with the diminution of the hæmoglobin, methæmoglobin appears, as indicated by its characteristic ray in the spectrum.

This distinguished observer has other objections to acetanilide as an antithermic which, perhaps, affect the question under discussion more directly. Remarking that it disappears absolutely in the system, so that no trace of it is found in the excretions, he complains that it is of moderate and unequal energy, while practically devoid of antiseptic properties. Furthermore, he declares it to be very inferior to antipyrin as an antithermic, and so resembling phenic acid that, like the latter, it should be discarded as an antipyretic.

A paper read by Dr. George N. Acker, of Washington, before the District of Columbia Medical Society, two years ago, surveys briefly but comprehensively, and very conscientiously, the literature of antipyrin in fevers, and gives the results of his own experience with it in his service as attending physician to the Children's Hospital. He quotes the large experience of Jahn in its favor; that of Macknew, Ernst, May, Burrs and others, for and against, showing that to offset its tolerably uniform antipyretic effects there stand the objections that such effects are liable to be quite evanescent, and to be attended with functional and organic disturbances varying all along from the cutaneous exanthem to cyanosis and collapse, and

even to sudden death, as in the case of Burrs, where the autopsy showed congestion of the brain and its membranes, and of the lungs, and infarcts of the kidney, and of an enlarged and softened spleen. In this case only 45 grains were administered, 30 grains being given at one time and the remainder after a short interval.

Dr. Acker greets with pleasure the advent of any drug that will control the temperature in typhoid fever, and thinks he has found it in antipyrin; but he frankly admits that it does not arrest the natural evolution of the disease.

The discussion following this paper was equally significant, the weight of opinion being decidedly against the use of antipyrin in typhoid, as the personal experience of some of the members present had illustrated the very dangers pointed out by Dr. Acker.

My personal experience with these remedies is hardly relevant to the present question; for, while I have used them many times as analgesics, and without ill effects, I have only used the acetanilide in two cases of typhoid, and then with but negative effects; that is, it reduced the temperature but slightly and temporarily, while the gastric disturbance attending its use was greater than that from the remedy for which it was substituted for the purpose of relieving the stomach. But all this signifies nothing, for, as already pointed out by Dujardin-Beaumetz, the danger from acetanilide lies not in its use as an analgesic, but as an antipyretic; for the obvious reason that conditions requiring antithermic measures are invariably associated with asthenia or a tendency thereto; while, in typhoid, are superadded grave anatomical changes, which call for reparative treatment, rather than that involving further disintegration of structure and impairment of function and vital force.

These, then, are the objections to the purely antipyretic treatment of typhoid, just reviewed:

It does not shorten the course of the disease.

It only relieves symptoms of secondary importance, while adding complications sometimes of the gravest importance.

It supersedes remedies which give fair promise of aborting the disease at the outset, or failing in this, of both mitigating its severity and shortening its duration.

What are these remedies? Probably the best so far known are those already named. Each one of them is more or less commended to our confidence by clinical reports and comparative statistics which show better results than either antithermic or expectant measures; but it is the purpose of this paper to consider but one of them.

Two years ago I had the honor to propose to this Society the salicylate of ammonium as a specific germicide, antiseptic and antipyretic especially adapted to the treatment of typhoid and allied fevers, and septic inflammations; submit-

ting these provisional propositions, among others, subject to the results of further experience :

The salicylate of ammonium is to be ranked among the most efficient of the antipyretics.

In all fevers characterized by extreme adynamia it ranks among the safest, owing to its ammonium base.

It is stimulant as well as antipyretic, and thus of itself fulfils indications only met by a combination of remedies.

It is an agent of wide germicidal powers, being promptly efficient in affections of great etiological and pathological differences, each confessedly arising from its own proper specific infecting microörganism.

As a remedial agent in typhoid and remittent fevers it is unsurpassed ; aborting them at the outset under favorable conditions and greatly mitigating their severity and danger under circumstances less favorable.

These conclusions were submitted with some diffidence, not from doubt of their substantial accuracy, for they had been drawn from an experience of two years with cases differing widely in character and severity, but from regret that the new remedy had not the good fortune of a better sponsor, of well-known and respected authority.

During the two years that have elapsed since that time more than fifty cases have fallen under my personal observation, including both typhoid and remittent fevers, and that other vague class, with somewhat too indeterminate clinical boundaries—typho-malarial fever. These have afforded, under the same treatment, substantially the same results as reported in the first series of cases. Some of them were aborted in the first two or three days of high temperature, after a preceding malaise of several days ; some ran a week, and some nearly two weeks, with mild symptoms throughout. My notes show but three cases lasting beyond the tenth day, except one discharged convalescent on the tenth day but a week afterward suffering a mild relapse. This, it may be remarked, was the only case of relapse that has occurred, and this might doubtless have been averted but that the patient, who lived far in the country, thought it unnecessary to send for help.

One was a case that passed unrecognized for the first two weeks. The patient, a man of 70, found himself unable to empty the bladder, and sent for aid to the nearest physician, who resorted to the catheter twice daily for a week. At the end of this time I was sent for, and obtained a history of continuous fever and progressive decline, the urinary trouble still remaining. Cystitis was excluded by the character of the urine ; and, in the absence of abdominal symptoms, the elevated temperature seemed best accounted for by urethral fever. Quinine was given to control this, and for support, and a nourishing diet was directed. For a week more the temperature continued

to range from 101° to 102° , but vesical adequacy returned in the course of two or three days.

About this time his wife took to her bed, after several days of great lassitude, and soon afterward their son, both displaying the typical features of typhoid, including—in the case of the latter—hæmorrhage from the bowels. The former had considerable subsultus and delirium, and almost constant hiccough for twenty-four hours. But notwithstanding these untoward symptoms and her advanced age—over 70 years—her temperature fell to normal on the seventh day, and her convalescence was rapid enough to enable her to resume her duties as nurse to her husband before his fever had quite left him.

These coincident and similar cases are suggestive in several particulars. The first may be regarded as a type of the hospital case in this respect, that when its character was fully recognized it had passed beyond the point where abortive treatment was available. It is true that, as a mere antipyretic and antiseptic measure, ammonium salicylate was given in the same manner as in the associated cases, but, however, without any expectation of a like result. The remedy did all that was possible under the circumstances ; it steadily subdued the temperature and gave a degree of comfort during the course of sickness remaining not known in its first half.

The second case illustrates the practicability of abortive treatment in cases where recovery at all is problematical. The age of the patient, and the early occurrence of marked asthenia, were more suggestive of stimulating and supporting than of specific measures—in fact, were calculated to discourage the latter as more likely to uselessly perturb than benefit.

Again, a comparison of the expectant and abortive methods is here afforded, as significant as a much larger number of cases would ordinarily permit. It proves nothing, but it presents probabilities too strong to be disregarded.

Another case has interest because the typhoid attack occurred in the eighth month of pregnancy, and because of the temporary substitution of acetanilide in the treatment. This was because the salicylate was not at first well borne by the stomach. For three days the acetanilide would often reduce the temperature a degree to a degree and a half, then it rose to 103° , when the ammonium salicylate was given again, with the effect that the high temperature came down three degrees within twenty-four hours, and disappeared entirely three days afterward, when I found the patient sitting up and well enough to be discharged. Her fever had run a course of nine days.

In this case there was no doubt of the diagnosis, for the clinical history was complete, and another case occurred in the same house during her convalescence.

(To be concluded.)

FOUR CASES OF OOPHORECTOMY.

Read before the Medical Society of the District of Columbia, April 18, 1888.

BY J. TABER JOHNSON, M.D.,
OF WASHINGTON, D. C.

Case 1.—Mrs. S., æt. 33, married, the mother of two children, the youngest being 8 years old, has been a sufferer more or less since the birth of her last child; at first from subinvolution, then from prolapse, and for the last three years from an incurable anteversion, and all the time from painful and profuse menstruation.

I have been her physician for about fifteen years, and during the past seven years have exhausted all my resources to keep her uterus in position and lessen her monthly flow, without accomplishing any lasting good. During the summer of 1885, when about to leave the city for a two months' vacation, I turned her over to Dr. Magruder, who reported upon my return that he had been unable to keep her uterus in position.

The next summer I went to Europe, and Dr. Buym attended her with a like experience. In addition to her troubles already mentioned she had hydrometra, passing at times with a sudden gush half a pint or more of muddy-looking water from the uterus. Whenever the uterus was lower down than usual she had reflex nausea and persistent vomiting, which could only be relieved by replacing the organ and retaining it in position by some artificial support.

During the last year the tenderness became so great that she was unable to wear anything but a cotton tampon. She suffered much from ovarian pains also. Several months ago I discovered a fibroid enlargement in the anterior wall of the uterus. In the three months following this discovery it doubled in size and interfered constantly with the function of the bladder. She was compelled to remain most of the time in her room, only taking dinner with the family. The general tenderness in the pelvis had increased so much by January 1, 1888, that I was at my wits' end. She could no longer tolerate the cotton supports, and she was in greater need of them than ever before.

I believed she had a growing fibroid, and that she had a stormy, painful and dismal life before her, and I saw only one way out of her troubles—unless electricity would help her. I tried this several times, but each application made her so nervous and affected her so unpleasantly that she finally refused to have any more of it. I then told her that I had but one more arrow in my quiver, and that was Tait's operation.

She thought it over and talked it over with her family and friends, and finally requested that it should be done, as she much preferred to run the risk of death than to live on in the same way she had been for the past few years, with no other prospect of relief.

She entered my private hospital on the 9th of

February last, and I removed the uterine appendages on the 11th of the same month. She made a perfect recovery, without rise of pulse or temperature. She had no pain and took no medicine.

As she had been so long an invalid, she remained in the hospital two months in order to regain her strength as much as possible before resuming her duties as head of her household. I cannot better state the result than by quoting a few lines from a letter she left for me when she departed:

MY DEAR DOCTOR:

It is not without regret that I leave your Sanitarium to-day. I am reminded of the feelings with which I came. After suffering every moment of nearly four years, until it was far easier to choose the rest which death gives than living—now to return home free from pain; can one help loving a place where she was so changed. Oh, what a change has been wrought. I go from here verily a new creature. To say you have given me back my life and health, through the blessing of God, is only telling a part. Only a few weeks since the thought of living was a burden; now the word life means volumes. Oh for the pen of a ready writer, that I might tell you of my gratitude, etc.

Case 2.—Miss S., sent me by Dr. Wells from Hyattsville, only 17 years old. She fell from a hammock three years ago and injured the end of her coccyx. Since that time has had constant coccygarlina with a desire to pass water every ten or fifteen minutes. She has led a miserable existence. Many physicians have seen her, and still she grows worse instead of better.

Last winter she went to Baltimore and spent four months in a hospital under the care of an eminent gynecologist. Added to her other troubles she had valvular disease of the heart, a legacy from frequent and painful attacks of rheumatism, and a constant burning pain in the left ovary. This finally became her most distressing symptom. She was sent to a private room in the Providence Hospital, where, after a month spent in ineffectual treatment, I removed the painful ovary and also about an inch of the injured coccyx. She made a good recovery, and has been perfectly relieved of her ovarian pain and her tormenting desire to pass water. For awhile she was free from pain in the spine, but recently has been suffering from muscular pain about the seat of injury. In this case only one ovary was removed, as the other appeared to be normal.

Case 3.—Mrs. S., æt. 37, married nineteen years ago, when only 16. Has never been pregnant; has always suffered at her monthly periods.

She came under my care about the 10th of March. She had been under medical treatment of all known and many unknown varieties for more than twenty years, and I had no hesitation in at once advising the removal of the uterine appendages. This was agreed to by the patient and her family. She came to my hospital, and the operation was done three weeks ago to-day.

Much difficulty was experienced in removing

one ovary, which was enlarged to the size of a lemon. It ruptured as it was being drawn out of the incision, and its contents, which were black and thick and sticky, were expelled into the abdominal cavity. I had much trouble to cleanse the omentum and intestines, as the water used to wash out the cavity failed to dislodge this gluey, gummy black mud it looked.

I put in a drainage-tube, but was very anxious for the first week. On the morning of the fifth day she had a temperature of 101° , by night it was nearly 106° , and the patient had that indescribable facial expression which oftens betokens speedy death when the peritoneum has been injured. I gave her 20 grs. of quinine with calomel and Rochelle salts, and put an ice-water coil over the abdomen, and when I bade her good-night I never expected to see her alive again.

In the morning her temperature had gone down to 100° and she has done perfectly well ever since; is now sitting up in a chair and walking about her room, is free from pain and I feel sure will soon be well.

Case 4.—Mrs. W., æt. 26, married, no children, was brought to me by Dr. Ralph Walshe. Mrs. W. had been well up to six months ago, when she began to suffer with constant pain in her back. Dr. Walshe found an enlarged and tender and prolapsed ovary. No treatment was of any avail—she constantly grew worse, and when any pressure was brought to bear upon the ovary she had nausea.

During the last two months it grew rapidly and, being located deep down in Douglas' pouch, there was constant pain. A strong current of electricity was tried, but the effect was unpleasant; she had to go to bed for several days, had a rapid pulse, fever and abdominal tenderness. It was not repeated.

When I saw her with Dr. W., I at once recommended its removal. This was agreed to by herself and husband and family. She entered my private hospital on the 12th inst. and I removed the tumor on the 14th. It proved to be partly ovarian and partly a broad ligament cyst, or else two small cysts and ruptured into each other.

The patient is now in her fifth day, with a pulse of 84 and temp. of 99° . Has suffered from wind colic. While she has much pain from this source, her pulse and temp. remain about normal.

MEDICAL PROGRESS.

ELECTROLYSIS IN DIAGNOSIS.—DR. E. C. GEHRUNG, of St. Louis, in speaking of the diagnostic value of electrolysis, says:

From the literature on electro-therapeutics, as well as from my own practice, I consider myself authorized to state that one of the effects of electro-puncture, especially by the cathode or negative pole, is that the tissues perforated by the non-insulated part of the electrode become matted together and form a more or less continuous fistulous tract, whereby the escape of fluids into the interstices or intervals between the different tissues so perforated is prevented. It also appears to modify the tissues along the tract of the electrodes so that inflammatory processes will rarely, if ever, be witnessed. Even punctures through the peritoneum seem to be of little importance, for which we have the attest of many trustworthy authorities.

If these premises are correct, we may conclude that:

1. Electro-puncture, especially if combined with drainage, etc., is a curative agent for many tumors, as fibroids, cysto-fibroids, cysts of a great variety, and abscesses, and that,

2. Electrolysis renders exploratory punctures comparatively harmless, and far superior to ordinary acupuncture with aspirator needles or the needles of the hypodermic syringe, which latter means have formerly been recommended to clear up a doubtful diagnosis.

Based upon these facts, we are authorized, when the absolute differentiation between two possibilities has failed, when put to the test of the usual legitimate means of diagnosis, and especially if both otherwise admit of electrolytic treatment for their cure, we are not only authorized, but may safely use the drainage-electrode to clear up the mystery. The question being decided, either electrolysis alone or combined with drainage may be used, as the case demands. In many cases, an otherwise doubtful diagnosis may thus be decided, while in fact the curative treatment for either is started. This appears to me to be a far safer way to differentiate than by opening the abdomen when in doubt.

Had Dr. Semeleder, in his operations on ovarian cysts by electrolysis, made his punctures at the most dependent portion and drained the cysts, he would very probably have lessened the duration of the treatment considerably, diminished the number of punctures necessary, and lessened the mortality in his cases. Dr. Semeleder would probably have found more followers. Dr. Apostoli advises and practices *electro-cautery* puncture for hydrosalpinx. Dr. A. makes a large fistulous tract by means of a large trocar. This corroborates my view as expressed above, that most intra-

A CLUB FOR THE DEAF.—It is proposed to establish in Glasgow a club for the exclusive use of the deaf, and the proposal has the support of several Glasgow aurists, since the bringing together of persons that can speak fluently, but are dull of hearing, or altogether deaf, would promote social intercourse and further the science of lip reading.

pelvic and intra-abdominal cysts can be so reached and drained, and, I feel certain, with much greater facility and safety by my trocar and canula in combination with electrolysis.—*Amer. Jour. Obstetrics*, August, 1888.

PSYCHICAL BLINDNESS THE KEY TO A LESION IN THE ANGULAR GYRUS.—In his Address on "The Surgery of the Brain and Spinal Cord," at the fifty-sixth annual meeting of the British Medical Association, DR. WILLIAM MACEWEN related the case of a man who had received an injury about a year previously, suffered from deep melancholy, strong homicidal impulses, relieved by paroxysms of pain in the head of indefinite seat. Though the pain was excruciating he welcomed it, as it temporarily dispelled the almost irresistible impulse to kill his wife and children or other people. Prior to receiving this injury he was perfectly free from impulses of this kind, and had led a happy life with his family. Behind the angular process of the frontal there was a slight osseous depression, which could not account for his symptoms. There were no motor phenomena, but on minute inquiry it was discovered that immediately after the accident, and for about two weeks subsequently, he had suffered from psychical blindness. Physically he could see, but what he saw conveyed no impression to his mind. An object presented itself before him which he could not make out, but when this object emitted sounds of the human voice, he at once recognized it to be a man, who was one of his fellow-workers. By eyesight he could not tell how many fingers he held up when he placed his own hand before his face, though by the exercise of his volition in the act, and by other sensations he was cognizant of the number. He had been in the habit of reading the New Testament, and when he had so far recovered from his injury, he wished to resume his reading. He knew where the book lay near his bed and could put his hand on it in the dark. One day he stretched out his hand, took the book, recognizing it, through the sense of touch, by its smooth leather covers, and the deeply indented letters on its back; he opened it, saw what he considered must be the letters, and the blocking of them into divisions for the words, but they were unknown symbols to him, they conveyed no impression of their meaning, the memory of their signs was gone, it was a sealed book to him. These phenomena, however, gave the key to the hidden lesion in his brain. On operation the angular gyrus was exposed, and it was found that a portion of the internal table of the skull had been detached from the outer, and had exercised pressure on the posterior portion of supra-marginal convolution, while a corner of it had penetrated and lay imbedded in the anterior portion of the angular gyrus. The bone was removed from the brain and re-implanted in proper

position, after which he became greatly relieved in his mental state, though still excitable. He has made no further allusion to his homicidal tendencies—which previously were obtrusive—and is now at work.

Such cases of complete mind-blindness are rare, and the definite localization in this case will assist in indicating in man what function the anterior portion of the angular gyrus and the posterior portion of the supra-marginal convolution subserve.—*Brit. Med. Journ.*, Aug. 11, 1888.

GUNSHOT WOUND OF LIVER COMPLICATED WITH COMPOUND COMMINUTED FRACTURE OF THE RIBS.—DR. A. P. FRICK, Ft. Selden, N. M., reports the case of a healthy man, æt. 57, accidentally receiving a 44 calibre pistol shot wound, $5\frac{1}{2}$ inches to the right of the anterior median line of the body, and about midway between the axilla and the anterior superior spinous process of the ilium, emerging posteriorly about 1 inch lower, and $5\frac{1}{2}$ inches from the posterior median line of the body. The portions of the seventh, eighth and ninth ribs lying in the track of the ball were comminuted. Profuse hæmorrhage continued for more than twelve hours, when it ceased spontaneously. Five days later, under ether, the two wounds were connected by an incision, the loose fragments of bone removed and the sharp edges rounded off. This exposed a lacerated wound of the right lobe of the liver, with an abscess $1\frac{1}{2}$ inch deep about in the middle of the exposed portion of the liver. The lacerated parts were trimmed and the abscess opened, drained and irrigated. A drainage-tube was then inserted and the wound closed with interrupted suture, sublimate dressings applied, and the patient proceeded to a good recovery, complicated only by some troublesome bedsores and a slight necrosis of the proximal end of the ninth rib, being discharged perfectly recovered three months later.—*Phil. Med. Times*, May 1, 1888.

TREATMENT OF UNUNITED FRACTURE OF THE NECK OF THE FEMUR.—In the *Riforma Medica* of August 14 a case is related in which PROFESSOR LORETA successfully treated an ununited intracapsular fracture of the neck of the femur by scraping the fractured surfaces and inserting a bundle of metallic sutures between them. On January 23 a robust man, æt. 36, was admitted into the Bologna clinic with the history of a fall on the left hip nineteen months previously, since which he had been quite unable to stand and had suffered from constant severe pain, shooting from the left hip-joint into the gluteal region, the point of greatest intensity being over the course of the sciatic nerve. The limb was much wasted, but it was normal in position and scarcely at all shortened. Flexion and extension of the thigh on the pelvis were almost impossible, but the patient

could occasionally execute very slight movements of rotation and abduction. In rotation, he was sometimes conscious of faint crepitus in the trochanteric region. On February 15 Professor Loretta operated with full antiseptic precautions. He made a long incision behind the great trochanter, so as to expose the capsule of the joint, when he noticed a depression between the intracapsular and extracapsular portions of the neck of the femur. On moving the limb, it was found that there was a fracture without displacement in that situation. The capsule was then opened, the fibrous tissue between the fragments divided, and the fractured ends carefully freshened by scraping with a raspator. As it would have been very difficult to wire the fragments, a bundle of from eight to twelve metallic sutures was introduced between them, and brought out at the lower angle of the external wound. The wound was carefully cleansed, a drainage-tube inserted, the edges brought together with deep and superficial interrupted sutures, and the whole covered with a sublimate dressing. A long outside splint was then applied. Five days after the operation the bundle of metallic sutures was removed, and the wound healed by first intention. In less than a month the pain had permanently ceased, and fifty-five days after the operation the patient left the hospital, being able not only to stand, but to walk with no further support than an attendant's hand.—*British Medical Journal*, August 25, 1888.

OXYCYANIDE OF MERCURY THE BEST OF ANTISEPTICS.—Compared with the corrosive chloride (*Comptes rend. d. Soc. d. Biol.*, July 6, 1888, p. 585):

1. Its solution has a slightly alkaline reaction and precipitates albumin only slightly.
2. It is less irritant than solutions of sublimate.
3. There is less absorption by tissues than in case of sublimate.
4. Solution $\frac{1}{1500}$ th does not attack, except slightly, the materials used in surgical instruments.
5. Tested by its power of keeping soup, the antiseptic power showed itself six times greater than that of the bichloride.
6. Tested by the power to destroy the micrococcus pyogenes aureus, the advantage was slightly in favor of bichloride, $\frac{1}{400}$ th to $\frac{1}{1300}$ th.
7. Employed on suppurating surfaces or to render a mucous surface antiseptic, it furnishes much better results because of the tolerance by tissues and of feeble absorption.

The cyanide of mercury has about the same properties, but the oxycyanide is more powerful against the micrococcus pyogenes aureus.—*American Journal of the Medical Sciences*, Sept., 1888.

PAPOID IN THE TREATMENT OF DIPHThERIA.—DR. J. R. BROMWELL, of Washington, reports

six cases of diphtheria in which papoid was used successfully. From the results in this limited number of cases he feels justified in drawing the following conclusions:

That papoid, applied to diphtheritic membranes, is a safe and reliable solvent. That it possesses antiseptic properties; that the temperature falls rapidly with the disappearance of the membrane, which, according to Jacobi, proves the rapid absorption and elimination of the diphtheritic poison; that the phenomena of secondary blood-poisoning were absent, owing to the rapid solution of the membrane, supplanting the processes of suppuration by which it is removed if left to itself. That the period of incubation either varied from eight days to thirty-five days, or the poison was conveyed to the two children, who had no communication whatever with the sick, by the clothing of those who did the nursing. That age is not exempt; that there is a marked family susceptibility to the poison of diphtheria, as evidenced by the fact that, whilst a friend who assisted in nursing, and the servant, a colored woman, who was in the sick-room a dozen times a day, escaped, every member of the family, from the youngest child to the grandmother, contracted the disease.—*Amer. Journ. Obstetrics*, August, 1888.

CHLORIDE OF METHYL AS A LOCAL ANÆSTHETIC.—The cold developed by the passage of chloride of methyl from a liquid to a gaseous state was utilized some time since by a French surgeon, M. Debove, for the purpose of inducing local anæsthesia. Certain modifications have been introduced by M. BAILLY, of Chambly, by which the method has been rendered much more practical and safer. Instead of freezing the part by allowing a jet of the gas from a siphon receptacle to play upon it, he saturates plugs of cotton wool with the liquid, and places them on the spot to be operated on, or on the seat of pain. It has been found exceedingly useful in the treatment of neuralgia, sciatica, etc. To facilitate the transport of the liquid he has designed a double glass tube, the inner one containing the methyl, and the space between the two tubes being rendered a vacuum. By means of a capillary tube the anæsthesia can be directed to particular spots too small for the application of a tampon. When the latter is employed, in five or six seconds the skin becomes blanched, indurated, parchment-like and depressed. The anæsthesia thus obtained is amply sufficient to allow of incisions, scarifications, cauterizations, etc., without sensation.—*British Medical Journal*, August 4, 1888.

TREATMENT OF ABNORMAL DEVELOPMENTS OF EPIDERMIS; CALLOSITIES, CORNS AND WARTS. (ROSEN, *München Med. Wochens*, No. 28, 1888) following Nussbaum's suggestion, has employed

salicylic acid in substance instead of dissolved in collodion, applying it as a powder upon the lesions in question, and covering with moistened bandages. The results have been very good. The method consists of the following procedure: The lesion to be treated is first made moist with an aseptic solution, and then covered with quite a thick layer of salicylic. Over this is placed some of the finest borated lint in four thicknesses, and the whole is bound down with a piece of gutta-percha. This dressing is to remain, in ordinary cases, for five days without being disturbed. After the dressing is removed the pathological process is found easily and painlessly cured, and without any bleeding. In more obstinate and harder lesions the dressing must remain on for ten days, or after five days be renewed.—*Journal of Cutaneous and Genito-Urinary Diseases*, September, 1888.

BITUMINATE OF IODOFORM.—The application of iodoform is a favorite method of treatment of chancres with many, but there are certain disadvantages attached to it which sometimes render its use impossible. These are, in the first place, the disagreeable odor, which often shuts off the patients under treatment from the society of their fellowmen; secondly, the drug is not well borne by every one, and it occasionally excites an erythema or an eczematous eruption which compels its withdrawal; and thirdly, in ulcers with overhanging edges, the use of iodoform sometimes excites such exuberant granulations that they spring up and press against the undermined edges of the ulcer, preventing the escape of pus formed beneath. DR. S. EHRLMANN writes in the *Centralblatt für die Gesamte Therapie*, for July, 1888, that he had long sought to obviate those disadvantages, and finally lighted upon a mixture of iodoform and tar, which seemed to answer the purpose admirably. After a long series of experiments, he succeeded in combining these two substances in such a way that a new preparation was formed in which the particles of iodoform and tar were so intimately mixed that under the microscope only hyaline plates were to be seen, the characteristic crystals of iodoform being not at all, or only indistinctly, recognizable. This bituminate of iodoform, as it has been called by the writer, is a substance somewhat resembling mica, consisting of translucent and transparent scales, of a brownish metallic color, which are easily pulverizable. The characteristic odor of iodoform is wholly absent, and only a slight, mildly aromatic, and not unpleasant smell of tar is perceptible. This is so faint that it is noticeable only when a large quantity of the substance is present, and even this may be covered by mixing a mere trace of liquid storax with a large quantity of the powder. When the preparation is shaken up with a large amount of water the odor

of iodoform returns, but water in small quantity does not have this effect. From this it follows that in wounds having a very profuse secretion the application might not be strictly odorless, yet the author says he has used it in a case of a very extensive bubo, and after two days there was no odor perceived by either the patient or those about him. Dr. Ehrmann has used the bituminate of iodoform with success in the treatment of soft chancres, especially phagedenic, as a dressing, after the opening of suppurating buboes, in gummy tumors and ulcers of the leg. The powdered substance is applied to the ulcer and covered with a thin layer of wadding, over which is placed the ordinary dressing. The dressing is changed every 24 to 48 hours. In the case of soft chancres which are so situated that the dressing becomes saturated with urine, or which secrete profusely, it may be necessary to renew the dressing twice daily.—*Journ. Cut. and Genito-Urinary Dis.*, Sept., 1888.

A NEW METHOD OF TREATING TORPID ULCERS.—DR. F. SPÄTH says, the principal reason for the faulty healing and want of proper cicatrix formation in torpid ulcers, depends upon the imperfect blood supply to the borders, which are usually composed of calloused connective tissue. Upon such a poorly vascularized base, only weak and flabby granulations can spring up. The same conditions prevail if the base of the ulcer is composed of a fascia. The new method of treatment proposed by Späth, consists of free division through the ulcer's borders and into the sound skin, so that the cut edges gap far apart. When the blood flow has been well stopped and an iodoform permanent dressing applied to the wound, an abundant granulation formation takes place, which very quickly leads to cicatrization of the ulcer. In such cases as this the result of cutting around the ulcer, as well as transplantation, are equally ineffectual.—*Centralblatt für Chir.*, No. 14, 1888.

NUTRIENT AND SEDATIVE ENEMA.—The *Revue de Thérapeutique* recommends the following formula:

R.	Bouillon of beef	3iij 5j.
	Eggs	j.
	Bordeaux wine	5vj gtt. xv.
	Sodium bicarbonate	gr. viij.
	Tincture of opium	gtt. iv.
	Chloride of sodium	gr. iij.
	Peptone	5iv. ℥.

ANTISEPTIC SOAP.—PROF. REVERDIN gives the following formula of an antiseptic soap that is quite soft to the hands, cleansing and disinfecting them without causing any irritation:

Sweet-almond oil	72 parts.
Soda lye	24 "
Potash lye	12 "
Sulphocarbonate of zinc	2 "
Essence of roses	9 "

—*New York Medical Journal.*

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, SEPTEMBER 29, 1888.

SECONDARY MIXED INFECTION IN TYPHOID
FEVER.

Until recently the term typhoid fever was applied to a complexus of symptoms, well recognized and defined, and accompanied by a peculiar lesion of the intestinal tract. As now understood says DR. BAYARD HOLMES, in a paper recently read before the Chicago Medical Society, typhoid fever means the invasion of a non-pyogenic microorganism, however that invasion may take place—whether by way of the intestinal or respiratory tract, and whether or not accompanied by the classical symptoms that characterize abdominal typhus. He says typhoid fever is the infection of the typhoid bacillus, and the direct consequences of such infection. There may be symptoms and results due to infection by other microorganisms, but these he regards as accidental complications, and are not parts of the typhoid disease.

He claims that when the typhoid bacillus invades the human organism, the inflammation of the lymph-glands caused by the irritation of the bacillus and its ptomaine so diminishes their resistance that secondary invasion by pathogenic and other bacteria becomes an easy matter. Some of these bacteria are normal human parasites, causing no injury to the healthy organism. But when any part of the intestine is dead, or when the equilibrium—the neutrality—between the normal organism and its bacteria is destroyed,

the usually harmless and perhaps helpful bacteria may set up a destructive colonization of the tissues, and produce suppuration, coagulation-necrosis, hæmorrhagic infarction, lymphatic engorgement, or any of the results so frequently seen in the infectious diseases.

The typhoid patient, on account of the local intestinal or laryngeal lesion, is easily infected with the pus-microbe, and all the more easily because of his general condition, due to the typhoid infection; a few days continuance of which is sufficient to interfere materially with the usual power of resistance of the lymph apparatus to bacterial invasion. A Peyer's gland, once infected and engorged, may be soon attacked by suppurative bacteria, and this second infection becomes the direct cause of the ulceration and sloughing of the tissue. He thinks the operations of the new factor are shown by the symptoms *i.e.*, the less regular remissions of the temperature, which now assumes a septic character. In favorable cases, the micrococci, carried into the mesenteric glands, he thinks may be arrested and destroyed, the glands returning to nearly the normal condition. In other cases, however, we are told that the filtering power of the overtaxed glands is overcome, and the lymph circulation is flooded with bacteria, which get into the lungs, setting up a second capillary embolism, with the presence of a parasite that can cause destructive inflammation—the pneumonia that Murchison says "rarely appears before the third or fourth week, and may terminate in small abscesses, or, rarely, in gangrene."

But according to Dr. Holmes the presence of the pus-microbe is not the only condition essential to the production of destructive inflammation, nor does it always set up the suppurative process in tissues whose vitality is so much lowered as that of the lungs in the third week of typhoid. From the investigations of De Bary and Grawitz there is reason to believe that we have not attached sufficient importance to the resistance of the tissues. Not all, if even a small part, of the bacteria are arrested in the lungs. Doubtless many of the emboli are taken up by the pulmonary lymphatics and carried to the mediastinal glands, to be destroyed; for we not infrequently see these glands enlarged, and sometimes broken down into abscesses. Sometimes, he adds, when there has been no indication of infection of the

tributary parts, the central lymph-glands become enlarged, and even undergo destructive inflammation. Dr. Holmes reports a case in which, on account of high temperature apparently due to axillary adenitis, he extirpated the enormously enlarged glands; the temperature fell to normal on the fourth day (from 103), and the patient made an uninterrupted recovery. In this case the evening temperature was normal on the thirty-fifth day of the fever, and continued so for four days, when the patient began to eat solid food. On the forty-first day the temperature rose to 100°, and on the forty-seventh day it was 103°, when the axillary glands were removed. But there are cases in which, after a time, the balance of power ceases to be on the side of the patient, there is no resistance to the invasion of the septic coccus, and abscess formation takes place in all parts of the body. These abscesses may be very small; Popoff has shown that in the brain they are almost always miliary and multiple. And besides multiplying in definite localities, the bacteria may multiply in the circulating blood, constituting a septicæmic condition. Nor is this all. Dr. Holmes says, the destruction at the first point attacked by the pus-microbe may be so great as to involve all the coats of the intestine, and perforation may result. "In this way the largest serous cavity of the body is at once hopelessly infected, and fatal issue is not long delayed." A case of abscess of the spleen in typhoid, successfully operated on by Lauenstein, of Hamburg, was reported in *THE JOURNAL* of March 31. Even when the destructive process, of itself, does not cause speedy death, it may involve a blood-vessel, and cause death from hæmorrhage.

When the resisting power of the tissues has been reduced to a minimum by the low state of nutrition, in typhoid fever any part of the body where germs are present may become infected. Old scars open up, and old bone disease lights up again, from the germination of lasting spores. Such are the views, briefly stated, presented in Dr. Holmes' paper.

SELLING THE SAME GOODS TWICE.

It is, so far as we know, a maxim neither of political economy nor of commerce, that a person should sell the same goods twice to the same per-

son, and try to make him think he is getting something new. This is what the non-graded medical schools of this country are doing. It is not done in other countries; the United States is peculiar in being the only civilized country on the face of the Earth where there are any non-graded schools; it is the only country where a student can graduate in medicine after having had but two courses of lectures; the only country where he can be graduated without having had the advantage of *practical* in addition to theoretical courses; the only one in which the examination for graduation is not always as much or more practical than theoretical; and the only country in which there are medical colleges that admit the student without inquiring into his fitness to enter upon the study of medicine.

As we say, it is in this country alone that medical colleges exist that sell the same goods twice to the same student. This is what the two-course, non-graded schools are doing. When one reads in an annual announcement that one of the requirements for graduation is "two full courses of lectures," he need read no farther to know that the student entering in 1888-89, to take two courses, must in 1889-90 pay for what he has already had and paid for in 1888-89. Nor need one look farther to know that this school is one of a class that graduates, *in two years*, 346.9 students out of every 1000 matriculates, while there is another class that graduates but 209.6 of every 1000 *in three years*—a difference of 137.3 graduates in the 1000 matriculates.

Is it just to the student to sell him the same goods twice, and at the same time put among the "extras" courses that he must take before he is fitted for the practice of medicine? If courses in medical and physical diagnosis, operative and minor surgery, practical chemistry, practical pathology, diseases of the eye and ear, diseases of the chest and throat, operative obstetrics, and diseases of the skin, are not important parts of a medical education, why are they placed in the course at all, even as extras; if they are important why are they not always required for graduation? From one college announcement, of 1888-89, it is seen that while the aggregate fees for the tickets to all the lectures amount to \$140, the aggregate fees for "Private instruction not included in the regular curriculum or in the requirements for graduation" (9 courses) is \$182. The reader of this an-

nouncement is supposed to believe that "The members of the senior class are instructed *practically, in connection with the recitations*, in the most important operations in midwifery and gynæcology;" but we doubt if he will believe it after a moment's thought.

It may be said that when a student attends a school that sells him the same goods twice, and tells him on graduation day that he is fully prepared to practice medicine, when he is not, he does so with his eyes open. Very true; we make most of our mistakes in life with our eyes open. But it is possible that while his eyes may be open, the student does not see—as he will before he has been in practice six months—and it is more than probable he will not recognize the injustice done him. The second-course student will inform the first-course student at his side that Prof. B. will tell a certain story to-day, and that next Tuesday he will tell another. What is that second-course student doing by the side of the first-course man? He is buying the same goods twice. Others have done it before him, and he thinks it is proper. He will see his mistake when it is too late—after he begins practice. We classify studies in primary schools, in grammar schools, and in colleges; why make a heterogeneous pill-mass of medical study, and expect the student to digest it and thrive on it?

"NON-ALCOHOLIC" TONICS AND BITTERS.

DR. B. F. DAVENPORT, Chemist to the State Board of Health of Massachusetts, has recently analyzed 47 tonics and bitters. Of these 46 were found to contain from 6 to 47.5 per cent. of alcohol, the average percentage of alcohol in the 46 being 21.5 per cent. Viewed in the light of the analyses, the statements in the advertisements of some of these preparations seem somewhat misleading. One of the tonics, advertised as "not a rum drink," contains 13.2 per cent. of alcohol. Another, admitted to contain Marsala wine, contains as much alcohol as that wine. A Coca Beef Tonic, advertised as made "with sherry," contains 23.2 per cent. of alcohol, while sherry contains but 18 or 20 per cent. Parker's Tonic, claimed to be a purely vegetable extract, "stimulus to the body without intoxicating," contains 41.6 per cent. of alcohol. Whisky and brandy contain but 50 per cent. of alcohol. The advertisement of this tonic says: "Inebriates struggling

to reform will find its tonic and sustaining influence on the nervous system a great help to their efforts."

Seaweed contains alcohol according to the analysis of Schenck's Sea-Weed Tonic, which is said to be distilled from seaweed, perfectly harmless, and free from the injurious influences of corn and rye whisky. It contains 19.5 per cent. alcohol. Baker's Stomach Bitters contains 42.6 per cent. Hoofland's German Bitters, advertised to be purely vegetable, and free from alcoholic stimulant, contains 25.6 per cent. Hostetter's Stomach Bitters contains 44.3 per cent. Kaufmann's Sulphur Bitters contains no sulphur, is advertised to contain no alcohol, but contains 20.5 per cent. "Dr." Richardson's Concentrated Sherry Wine Bitters, to be taken in doses of a tablespoonful to half a wineglassful or more three times a day, or "when there is a sensation of weakness or uneasiness of the stomach," contains 47.5 per cent.—2.5 less than whisky and brandy. Walker's Vinegar Bitters, claimed to contain no alcohol, contains 6.1 per cent. Copp's White Mountain Bitters, "not an alcoholic beverage," contains 6 per cent. of alcohol. Beer and ale contain from 3 to 5 per cent. of alcohol.

When a person takes the usual "dose" of one of these mixtures—about a wineglassful three times a day, he takes the equivalent in alcohol of about half the quantity of whisky, and on an average a little more than the same quantity of sherry. Moreover, he must take his alcohol "blindfold;" it may be a good article, but the probabilities are that it is not. There are a great many people that would on no account drink beer, wine, whisky or brandy as such, but yet use these "tonics" and "bitters" freely and regularly, give them to their children, and recommend them to persons addicted to the use of alcoholic liquors, as a harmless substitute and cure for the alcohol habit, as a stimulant to flagging or a sedative to over-active organs, and as cures for the most dissimilar diseases.

Nothing better illustrates the human fondness for the mysterious than the readiness with which people buy and consume secret compounds. And while we admit as readily as any one the individual rights of the people, something should be done to prevent avaricious men from poisoning people by selling them compounds that are injurious to health.

A MISTAKE.

Some of the subscribers to *THE JOURNAL* always pay promptly each year, others generally delay until they receive a bill from this office indicating their indebtedness; and there are always a few on our books who, notwithstanding the receipt of one or two bills each year, still allow their accounts to run two or even three years, until their individual indebtedness amounts to \$10 or \$15. During the present month, it being near the end of the first quarter of the *JOURNAL* year, we authorized the clerk to send out bills as usual to all such as had not paid for the current year, simply indicating the amount of their indebtedness. For the few whose amounts had remained unpaid two or more years a special note was prepared which, after stating the amount of their indebtedness, directly requested them to remit the amount without further delay, or else notify us to discontinue *THE JOURNAL*. By some lack of attention on the part of the clerk, some of these *special notes* have been filled out and sent to subscribers whose accounts were in arrears only for the present current year, and, as might have been expected, they have been regarded as unnecessarily captious or offensive. We regret the mistake, as no such use of the special dunning letter was intended by us.

PROGRESS OF YELLOW FEVER.

The fever epidemic in Jacksonville continues. The whole number of cases reported to date, September 25, is 1991, and 217 deaths. A few new cases are reported at McClenny and some other towns in Florida. Seventeen cases and 4 deaths have been reported in Decatur, Alabama; and 14 cases and 5 deaths in Jackson, Mississippi. These indications of the spread of the disease westward in the direction of the Mississippi, has greatly increased the excitement among the people of the South and Southwest, and added much to the efforts at maintaining rigid inland quarantines, some of which appear to be judicious and well directed by the Health Boards and the Superintendent of the Marine Hospital Service, while others are injudicious and wholly unnecessary.

DR. F. SIEBENMANN has qualified as Privat-Docent of Otiatry in Basle, and DR. AARON as Privat-Docent in Laryngology.

EDITORIAL NOTES.

DR. GAFFKY, of Berlin, has been appointed Professor of Hygiene in Giessen.

LAUSANNE, it is thought, will soon have a complete University, as the funds have been guaranteed.

LIEBERMEISTER, of Tübingen, Riegel, of Gies-sen, and Quincke, of Kiel, have been proposed for the chair of special pathology and therapeutics in the University of Bonn, made vacant by the death of Professor Rühle.

HEADACHE FROM INTRANASAL DISEASE. — JOAL reports two cases that confirm the opinion of Mackenzie, of Baltimore, that one of the factors in the production of nasal disease is excitation of the sexual apparatus. In the *Revue Mensuelle de Laryngologie*, of July, 1888, Joal discusses some of the headaches that occur about the time of puberty. Hack claims that these headaches are due to intranasal disturbance, and his opinion is well supported.

DRAINAGE IN PUERPERAL PERITONITIS. — WOODWARD reports (in the *Boston Medical and Surgical Journal*, of July 12) a case of puerperal peritonitis that he saw about six weeks after labor. There was an extensive accumulation of pus in the abdomen, an abscess that had been circumscribed having burst into the abdominal cavity about 36 hours before labor. Laparotomy was performed, offensive pus evacuated, the cavity irrigated with hydronaphthol, 1-100, and a drainage tube and antiseptic dressing applied. The cavity was repeatedly irrigated with boiled water. The patient recovered.

CASATI'S MODIFICATION OF ALEXANDER'S OPERATION consists in making a single transverse incision through the skin, somewhat curved, with its concavity upward, thus uniting the two external rings. The round ligaments are then drawn out and shortened by excision of the redundant portions. The proximal end of each cord is then stitched to the distal end of the opposite one, thus forming a cross, which is united to the subjacent cellular tissue by a continuous catgut suture. The outer wound is closed with silk. The uterus is supported by vaginal tampons. This modification seems to be unnecessary, and the making of a comparatively complicated operation out of a very simple one.

SOCIETY PROCEEDINGS.

American Surgical Association.

Annual Meeting, held in the Main Hall, Grand Army Building, Washington, D. C., September 18, 19, 20, 1888.

TUESDAY, FIRST DAY—MORNING SESSION.

The Association was called to order at 10 A.M., by the President, DR. D. HAYES AGNEW, of Philadelphia.

The first business was the delivery of the President's Address. (See page 453.)

DR. JOHN ASHURST, JR., then read a paper entitled

A CONTRIBUTION TO THE STUDY OF EXCISIONS OF THE LARGE JOINTS.

The following is an abstract:

The remarks which follow are based upon the records of 120 cases in my own practice, in which excisions of the larger joints have been required, and will refer particularly to the operative method, the after-treatment, and the functional value and limitation of applicability of excision in the case of each articulation. The 120 cases embrace 4 of shoulder-joint, 19 of elbow-joint, 40 of hip-joint, 51 of knee-joint and 6 of ankle-joint excision.

Shoulder-joint.—My four shoulder-joint excisions have all terminated successfully. They all occurred in adults, three times in young persons, and once in an old person. The only case of special interest was that of a young married woman, æt. 30, admitted to the hospital in a very prostrate condition, with acute necrosis of the left humerus and consequent pyarthrosis of the corresponding shoulder-joint. The upper half of the humerus was removed at the first operation, and twenty-four days afterwards the entire remaining portion of the bone, including the condyle, the only osseous tissue left being a thin shell of small extent which adhered to the periosteal sheath on the inner surface. The patient recovered rapidly, and acquired a surprising amount of use of the affected limb, and the increasing firmness showed that at least partial reproduction of bone was occurring. With the elbow supported the patient could use her wrist and hand with considerable freedom.

In excising the shoulder-joint, or, more strictly speaking, the head of the humerus, for the glenoid cavity rarely requires more than superficial scraping or gouging, I have employed the method by a single longitudinal incision. I have endeavored to avoid wounding the tendon of the long head of the biceps, but when the parts are matted together by long-standing inflammation, the tendon is difficult to recognize and is often not seen until it has been severed.

In the after-treatment I attach much importance to the use of the well-known cushion devised by Prof. Stromeyer. It keeps the elbow out from the trunk, thus insuring the close application of the sawn humeral shaft to the glenoid cavity, and enables the patient to sit up or lie down at pleasure, without disturbing the dressings.

The functional utility of the limb after excision of the shoulder-joint is, upon the whole, quite good. The operation, although seldom called for in civil practice, should be adopted without hesitation in suitable cases, such as those of suppurative arthritis, caries and necrosis, in which the indication for the operation is found either in the pain or in the exhaustion from profuse purulent discharge. For plastic or rheumatoid arthritis or for simple ankylosis, the operation is not to be recommended, for the mobility of the shoulder compensates measurably for the stiffness of the joint, and the gain which would be obtained by operation is not sufficient to justify the risk.

Elbow-joint.—Of the 19 cases of excision of the elbow-joint six have terminated fatally. Two adults died within five days from traumatic gangrene following injuries so severe that amputation would have been the better operation; one died of delirium tremens; two from tubercular meningitis; and one, an old man, from exhaustion in the course of the fifth week.

In excising the elbow-joint, I employ a longitudinal incision on the inner side of the articulation, taking care not to wound the ulnar nerve and to retain the attachment of the biceps. As a rule, all the articulating surfaces should be removed, and, within reasonable limits, the more bone that is taken away the better, since flail-like union is less to be dreaded than ankylosis.

For the after-treatment I employ a somewhat obtuse-angled, internal splint (Physick's splint), well padded and protected by oiled silk. As bony union is to be avoided, it is not necessary to use a splint to render the part immovable. As soon as the external wound has become solid the splint should be abandoned and the arm kept in a sling.

The functional result of a successful excision of the elbow is more nearly perfect than that of excision of any other articulation. Cases which justify the operation are those of destructive or gelatinous arthritis, caries, necrosis, compound dislocation or fracture not so severe as to require amputation, and even simple ankylosis.

Hip-joint.—I have forty times resorted to excision of the hip-joint in 37 patients. Twice have I excised, at intervals, both hip-joints in the same individual, and once have I had recourse to re-excision in a case in which recurrent caries and recontraction followed some months after the patient left the hospital. This case terminated fatally from suppurative osteomyelitis and septic peritonitis at the end of a fortnight. Both cases of double excision did well. Of the 40 operations

28 have been followed by recovery, 11 by death, and one is still under treatment. Of the 37 patients 25 have recovered and 11 died. Should the patient now under observation die, the mortality rate will be, as regards operations, 30 per cent.; as regards individual patients, 32.4 per cent.; a better showing than the results given by most statistical writers.

The incision employed begins with a straight cut in the direction of the fibres of the gluteal muscle, curves around and behind the trochanter and terminates again in a straight cut corresponding to the axes of the femur. While affording free exposure to the joint, it necessitates but little transverse division of muscular fibres. The head of the bone may be made to protrude and removed with the chain saw, or under other circumstances divided by a small saw *in situ*. It is my custom to remove both trochanters and round off the sawn end of the femur.

In the after-treatment I keep the limb well adducted with simple weight extension, with lateral support by sand bags. As soon as the external wound has become solid and the patient can control the motions of the limb, he may be allowed to get about on crutches.

The functional result of hip-joint excision must be somewhat differently judged from that of excision in the case of other articulations. In most instances the operation is performed only when death seems threatened by profuse suppuration or its consequences, and if the patient is relieved of pain and restored to a fair state of health and comfort, the treatment is amply justified. At the Children's Hospital, in Philadelphia, where 20 of the 40 operations were performed, the rule is not to operate except in otherwise hopeless cases and hence our recoveries represent so many lives saved, but in many cases excision not only saves life but restores the patient to the active duties of existence. In 13 of the 28 cases the patient obtained a useful limb, and in two of these the utility is qualified as perfect. The condition which most often calls for this operation is "hip-disease." I consider the operation suitable in certain cases of gun-shot injury. For uncomplicated ankylosis it is not to be recommended, simple osteotomy being here a safer and surer method. Where ankylosis co-exists with extensive caries or necrosis, excision may properly be resorted to. I am afraid that the "age limit" for hip-joint excision must still be maintained; in the case of the knee, I have ventured to extend the benefits of this conservative procedure to adults and even to middle-aged persons, and with great success; but excision of the hip-joint becomes an operation of great and rapidly increasing gravity when once puberty is passed. Thus while I count twenty-five successes and only four deaths in persons under 15 years of age, I have had only three recoveries and no less than seven deaths, in those older. In adults the

operation should only be undertaken with a clear understanding of the very great risks by which, under the circumstances, it is attended.

Knee-joint.—I have performed 51 excisions, in 50 patients, once having employed a re-excision for ankylosis with recurrent deformity, in a case in which I had excised the joint nine years before. Once I amputated the thigh ten weeks after excision, on account of beginning failure of health, and a good recovery followed. Of the 51 cases, but 5 have ended fatally, a death-rate of less than 10 per cent.

In excising the knee-joint, I have uniformly adopted the single transverse incision and have invariably removed the patella. The bone sections are commonly made with a butcher's or bow saw. I take particular care to remove all of the diseased synovial membrane, as well as all particles of carious bone. In treating the large bursa beneath the quadriceps muscle, I have endeavored to hasten the cure by making a long incision in the outer side of the limb and either dissecting the bursa out bodily, or scraping away its lining membrane with a sharp curette. If foci of softened and carious bone are found beyond the points at which it is safe to use the saw, I remove them with the gouge, and if necessary cut a channel through the osseous wall in such a way that the part may heal firmly without leaving a sinus.

In the after-treatment I employ a bracketed wire splint, which while firmly fixing both thigh and leg, enables the limb to be dressed as often as is needful without causing the patient pain. I have left the limb on the splint as long as six or seven weeks. After bony union is well advanced and the external wound is almost healed, I substitute a simple posterior splint or gutter of pasteboard. I think it important to use means of mechanical support for at least six months, particularly with children.

The utility of the limb after successful excision of the knee is very great. The limb is stiff and slightly shortened; the foot is sometimes a little inverted, but the limb is strong, painless and enduring, and enables the patient to lead an active, useful life. As a substitute for amputation, and it is as such that I employ it, the merits of knee-joint excision cannot be gainsaid.

The cases in which excision of the knee-joint is indicated are chiefly those of arthritis, particularly of the variety for which years ago I suggested the name gelatinous; of caries; of neglected epiphysitis, etc. The operation may properly be performed in ankylosis with deformity, and also in certain instances of wound of the articulation where the extent of the injury is limited. In most traumatic cases, however, I believe that where any operation is called for, amputation will be found preferable.

Ankle-joint.—I have resorted to this operation six times, although about as often I have removed

the astragalus without interference with the tibia and fibula. Two of the six cases proved fatal from phthisis, one four months and the other nine months after operation. My impression is that this operation in itself is attended with very little risk.

In excising the ankle-joint I make an external incision curving around behind and below the outer malleolus and carried forward as far as can be done without endangering the extensor tendons, and prolonged upward as far as needful in the line of the fibula. A second smaller incision is made longitudinally over the lower end of the tibia. It is usually desirable to remove the whole astragalus. This is perhaps the most tedious and difficult of all excisions, and the operation may be facilitated by rendering the part bloodless by the use of the Esmarch apparatus. The ankle-joint is the only joint, with the exception of the wrist, in the excision of which the use of this apparatus seems to me to be desirable.

Some years ago I devised a bracketed splint for the after-treatment of ankle-joint excisions. This answers a good purpose. If antiseptic dressings are used, however, the part usually requires so little disturbance that a simple posterior gutter of pasteboard, supplemented by a fracture box, will be sufficient. The foot should be kept at right angles with the leg.

The cases which seem to me to call for ankle-joint excision are those of compound fracture and dislocation, less severe than to require amputation, and those of localized caries and arthritis, in which there is no suspicion of general tuberculous infection.

The large majority of my excisions have been performed without any of the so-called "antiseptic precautions," and the wounds have been dressed with simple oiled lint or with lint saturated with dilute alcohol. For more than a year past, however, I have employed the antiseptic method in almost all my large operations, using also antiseptic dressings in their after-treatment, and I think with benefit; though I am obliged to say that as regards the ultimate welfare of the patients, I have not noticed any gain. My best series of consecutive successes have been obtained under old methods, and I have not obtained any diminution of mortality by the adoption of the new. At the same time, I have seen no ill results which could be attributed to the use of antiseptic measures; their use shortens the period of convalescence, and they have the merit, on account of the infrequent change of dressings needed, that they greatly lessen the surgeon's labor. I know of no cases which require more personal and unremitting attention than those of excision, and it is an unquestionable advantage to be obliged to dress a wound only once a week, or every other week, instead of daily or every other day.

What will be the future of the operation of articular excision? The brightest triumph of con-

servative surgery in the hands of Fergusson and his successors,—will it keep its place? or, as some of our more enthusiastic brothers prophesy, will improved methods of dealing with joint disease in its early stages, make excision a matter only of surgical history and of antiquarian investigation? It seems to me that as the introduction of excision did not enable surgeons to abandon amputation for articular lesions, so improve treatment as we may, and educate the public as we may as to the necessity of being treated early, there will always remain a class of cases in which only by sacrificing a part, can we hope to save the whole, and in which excisions of the larger joints will therefore still be resorted to by judicious and conservative practitioners.

DR. LEWIS A. SAYRE, of New York: The paper of Dr. Ashhurst has so thoroughly covered the ground that very little is left to discuss. In excision of the hip-joint I have been in the habit of using the wire cuirass for the reason that it permits the carrying of the patient into the open air, an object not readily attained when the patient is kept in bed with the ordinary apparatus. In regard to the antiseptic treatment which I practice entirely, I think that I may claim that I have used it, without knowing it, from the time that I commenced practice of surgery. I think that my success has been largely due to the practice of pouring into the wound Peruvian balsam, which, from the creasote it contains, is an excellent antiseptic. I have also always arranged for thorough drainage. When I practiced my first excision in 1854, the operation was universally condemned. Some seem to now be going to the other extreme and performing excision of the hip-joint too early, before a thorough trial of local and general treatment has been employed.

DR. R. A. KINLOCH, of Charleston: There is now no disagreement so far as the general question of excision is concerned, but there are still some important questions to be considered. In the first place, the distinction of traumatic from pathological cases amenable to operative procedure; and in the next place, as regards the joints which are apt to do best in connection with excision for traumatic and pathological processes. A consideration of the age and surroundings of the patients is of importance. Probably the best results follow excision in connection with shoulder-joint cases for traumatism. In connection with gelatinous inflammations of the elbow-joint I have had satisfactory results even where all the material could not be removed.

I feel sure that if a few of the principles of so-called antiseptic treatment—cleanliness, thorough drainage and absolute rest, are adopted, many of the details may be omitted.

DR. T. F. PREWITT, of St. Louis, insisted on the necessity of getting cases of excision in broken down children out of doors as soon as possible.

DR. F. S. DENNIS, New York, called attention to cases of excision of knee-joint for disease beginning in abscess in the condyle. In these cases the abscess cavity breaks down after recovery, leading to the production of deformity. In these cases he takes away all of the abscess cavity, saws away a corresponding piece from the tibia, and brings the oblique surfaces together.

He has been in the habit of employing antiseptic dressings, removing the drainage-tube on the third day, allowing the first dressing to remain five or six weeks. In excision for injury only enough bone to allow of free drainage should be removed.

SIR WILLIAM MACCORMAC, London: He had heard with some surprise that the tendency seemed to be to postpone excision of hip-joint until all other measures had failed. This is not the position in regard to any other joint. In England the disposition is to perform the operation at an earlier period. Another point that he had not heard mentioned in the paper was in reference to the performance of operation in cases of old dislocation of the joint. He had performed this operation with success in old hip-joint dislocation, and reported the case of a sailor coming under observation three years after the occurrence of dislocation of hip-joint which had not been reduced. After the operation he could use the limb perfectly. He had been much interested in the recommendation of Dr. Ashhurst that a long incision be made to reach the subcutaneous bursa, a suggestion which he had not heard mentioned by any other surgeon.

DR. E. M. MOORE, Rochester, had been somewhat surprised to hear a certain amount of indifference expressed towards the use of antiseptic surgery. He had found in his practice the greatest improvement follow the use of antiseptic dressing in these cases of excision. He cited several cases showing the result obtained.

DR. JOHN E. OWENS, Chicago: He agreed as to the value of the wire cuirass, and referred to a modification of this apparatus consisting in the substitution of a frame of gas-pipe conforming to the outline of the body. On this the body is supported by means of flannel stretched between the two sides of the frame. Extension may be applied, if desired, by the use of adhesive plaster, counter-extension being provided for by elevating the foot of the frame. After keeping the patients in bed for thirty days, he tries to get them into the open air. He had found great advantage in keeping up a certain amount of extension after the patient was allowed to get up. By removing pain this enables the patient to move the joint more freely, and thus tends to favor greater mobility of the part. He thought that there was no comparison between the antiseptic methods and those formerly employed.

DR. FRED. LANGE, New York, referred to a class of cases in which the disease of the hip began

in the tissue outside of the joint, the articulation becoming involved at a later stage of the affection. In these cases he recommended early operation, with the hope that in this way necessity for opening the joint would be avoided.

(To be concluded.)

Obstetrical Society of Philadelphia.

Stated Meeting Thursday, September 6, 1888.

J. C. DACOSTA, M.D., IN THE CHAIR.

DR. WM. GOODELL read a paper entitled

A YEAR'S WORK IN OÖPHORECTOMY.

During the year 1887 he had had nineteen cases with one death; but including ten cases he had since had, there was only one fatal result in twenty-nine cases. The cause of death in this fatal case was uræmic coma from suppression of urine. How far the administration of ether was to be blamed for this renal complication he was not prepared to say, but he was inclined to think that chloroform was not so liable to cause congestion of the kidneys. The operation was performed for diseased ovaries and tubes, which were greatly crippling her.

The eighteen successful cases were performed for the following reasons and with the following results: Uterine fibroids, cured, 5, improved, 1; menorrhagia and ovaralgia, cured, 2, improved, 1; ovaralgia, cured, 3, improved, 1; epilepsy, improved, 1; hysteroneurosis, cured, 1; insanity, unimproved 2; pseudo-muscular hypertrophy, unimproved, 1.

In his experience the removal of the ovaries for uterine fibroids is almost always followed by a cure, that is to say menstruation ceases, the tumor rapidly lessens in size and no further inconvenience results from bulk pressure.

Of the three cases of menorrhagia associated with ovaralgia, the lack of complete success in one was due to the fact that only one ovary could be removed. The other ovary was so matted in organized exudation as not to be distinguishable.

The failure in one of the cases of ovaralgia was due to the persistence of menstruation after a thorough extirpation of both ovaries. This is a very rare result, but it will occasionally happen. Menstruation usually ceases in these cases after the lapse of a few months.

In the case in which the ovaries were removed for epilepsy, the result has not, thus far, been a cure, but the attacks come at longer intervals. Hardly time enough has elapsed for the woman to reap the full benefit of the operation, for she still has regular catamenial moulmina accompanied by bloody expectoration.

Time enough has not yet elapsed to decide whether the two insane patients will be improved

or be cured by the operation. Each one was an invalid and each one became physically well, but not mentally so. In Dr. Goodell's experience, which has not been a small one, those cases which exhibit aberration of intellect only during the menstrual periods, will almost always be cured by the removal of the ovaries. But cases of insanity in which the hallucination are continuous, yet much exaggerated at the catamenial periods, are by no means so likely to be cured by the operation, although they are generally very much improved. In any case about two years time must elapse before the nerve perturbations of this artificial change of life wholly disappear, and a cure should not be expected before that lapse of time. What is true in mental cases and in purely nervous ones, is also true in a measure where even coarse lesions of the ovary are found. Hence the surgeon must not look for full results, or for complete freedom from groin aches and pelvic pains, directly after the removal of even diseased ovaries and tubes. He must wait patiently for the ovarian nismus or habit to cease, until in fact the menopause has been wholly and fully established in every way.

In the foregoing nineteen cases, the spray was not used, but every other antiseptic detail was carefully carried out. The pedicle was tied with silk; the wound was closed by the same material, and dressed with gauze dipt in a glycerole of carbolic acid. Drainage was employed but once and that in the fatal case, but this had nothing to do with the issue. Eleven of the cases were treated at his private infirmary, seven at the Hospital of the University of Pennsylvania, and one at the patient's own home.

DR. H. A. KELLY liked the moderate tone of the paper just read. He believed that here, as in other fields of work, that we must be often satisfied with relative results. He liked the term "Ovaralgia" now better than he once did. Until we are better able to differentiate the exact nature of the lesion in some of these cases, he thought the term "ovarialgia" used generically is a good one.

He had a rare case of salamm convulsion, which had been treated for a long time. He had been called in to decide the advisability of an operation, and had refused to remove the ovaries. Two years later the ovaries had been removed and the patient cured. There did not seem to be any distinct connection between the pelvic and general condition.

DR. M. PRICE asked Dr. Goodell if in these operations he had ever noticed on ligation any change in the number of the "heart beats." He had several patients, in whom, on the evening of the day of operation he had found the pulse as low as 48. He had noticed somewhere that an operator found a drop of the pulse from 80 to 35 on ligating the ovarian nerve. Since then he had

had the pulse beats counted on a number of patients at the time of the ligation, and had found a drop of only 4 or five beats at most.

DR. J. PRICE said that Dr. Johnston, of Danville, Ky., had dwelt on the matter of slowing of the pulse very fully. He thought that the explanation of continued pain after an operation was to be found in the adhesions of the intestines, etc. Some of his most satisfactory results had been obtained in cases of extensive adhesions. In a recently reported case the patient had complained of agonizing abdominal pain. An adherent omentum and a knuckle of intestine had been separated, and complete relief obtained. He had operated on a number of cases where the only lesion found was a general adhesion of the whole mass of intestines. He had thoroughly separated them and had obtained most satisfactory results. Mr. Tait has repeatedly reoperated to free adhesions. He felt that operation for nervous disturbances was of very doubtful benefit, and he never operated unless he found actual disease. He preferred handing the patient over to others.

DR. M. PRICE related a case in which the whole trouble was due to adhesions. It was supposed to be a case of gall-stones. No disease and no gall-stones were found, but the intestines were matted together, the adhesions were released, and no pain was felt afterwards.

DR. JOSEPH HOFFMAN: Dr. Price has referred to the lowering of the heart-beat after application of the ligature. In a case of his own the pulse, which on the day of operation, before ether had been given was 120, had gone down in a few hours after the operation to 58; after ten days it crept up to 80. This low register of 56 to 58 was sustained even in spite of the temperature being 101° and 102°.

DR. B. C. HIRST had operated on a case in which a small portion of one ovary was left. The case had ceased menstruating even in spite of the part left behind. A stitch had passed through the remaining piece.

DR. W. S. STEWART wanted to know the effect of removal of both ovaries on menstruation. If at the time it should occur, there were any evidences, such as acceleration of the pulse, etc., as seen at the menopause.

DR. WM. GOODELL had referred to the point suggested by Dr. Stewart in his paper, and he said that just such symptoms appeared in these cases as appeared after the natural menopause. The full results were not obtained until after these ceased. He had never noticed a fall in the pulse beats as referred to, but he had often seen serious collapse follow the pinching of the ovary. He had seen the pulse fall to 97°, and in one case below this. He thought that a counterfeited aneurism was by no means an infrequent symptom of ovarian disease. He had had a patient from a

distance suffering from ovarian enlargement, aortic pulsations, and other nervous disturbances, for which he prescribed. Afterward a local surgeon insisted that she had aneurism. A second examination convinced him that such was not the case. This was afterwards made evident by her passing through an exceedingly difficult confinement safely. There are two conditions in which he was willing to operate for the removal of the ovaries although he found no disease. One is *epilepsy*, the other is *insanity*, for in these cases a woman should never conceive. He believed that the State should interfere to prevent men and women who suffer from epilepsy or insanity from getting married. Indeed he is not sure that the day may not come when by act of legislature an insane man will be castrated and an insane woman will have her ovaries removed. He has had a good deal of experience with removal of the ovaries for insanity and has had some happy results, on the other hand, he had been disappointed at times. In cases of epilepsy he had not had so much experience. He wished that gentlemen who have had such cases would report them.

DR. C. M. WILSON had had three cases such as spoken of by Dr. Goodell. In two the result was negative. One patient was apparently benefited for some months, but recent reports say there is a gradual relapse into the former condition.

DR. H. A. KELLY had, about three years ago, operated on a girl with a brachial palsy, resulting from infantile palsy, with, also, epileptic attacks, pre- and post-menstrual in character. For some months there was no improvement but lately she has become better. Dr. Kerlin had remarked to him that if in a good many of these cases of hopeless idiots operation were performed removing their respective organs during the period of active growth, they would not develop some of their worst features and would be more easily managed.

DR. J. M. BALDY had a case, which at the time of operation looked like true epilepsy. There was excessive pain, vaginismus, and other symptoms. The pain was relieved, but not the vaginismus, for which a subsequent operation was performed. The epileptic attacks had continued. They were, however, becoming much less frequent than formerly. Some two years had now elapsed.

DR. J. PRICE operated on a patient with double pyosalpinx and epilepsy at the menstrual period and at no other time. The recovery was complete and the relief absolute. Some months after she went to another institute complaining of pain and was again opened. He wished to know whether or not in these cases convulsions come on during the period in which the patient is in bed after the operation.

DR. JOSEPH HOFFMAN had a case of three months' standing, which suffered from hæmato-salpinx and suppurating appendix. The patient

had been having epileptic attacks. She had been entirely free from them since the operation.

DR. W. S. STEWART said that he did not think that the ovaries should be removed in all cases of epilepsy, as suggested by Dr. Goodell. He had an epileptic patient whom he had confined several times and whose children showed nothing wrong about the intellectual development. He had removed the ovaries of a woman suffering from epileptic seizures and she had received no benefit from the operation. She is now in an insane asylum.

DR. GOODELL said that there was no disease so likely to be inherited as epilepsy and insanity. If Dr. Stewart lived long enough he would find the children referred to develop the disease.

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Use of Gray Oil in Syphilis—Tuberculosis of the Iris—Use and Application of Hyoscin—A New Austrian Pharmacopœia.

At a recent meeting of the Imperial Royal Society of Physicians of Vienna, Prof. v. Lang read an important paper on "The Use of Gray Oil in Syphilis." It was known that the metallic mercury, such as was contained in the gray salve and the gray plaster, had a very powerful influence on syphilitic affections. As, however, the subcutaneous injection of mercurial preparations had undeniable advantages over any other method, owing to its commodity and on account of the fact that it permitted an exact dosage of the quantity of mercury to be used, the author had endeavored to find out a preparation which contained the mercury in the same form as in the gray salve, and which could at the same time be used for subcutaneous injections. After repeated trials, Prof. v. Lang arrived at the following formula:

Hydrargyri.	aa 3 parts.
Lanolini.	
Oil of olives.	4 "

The preparation under consideration contained 30 per cent. of metallic mercury, and from 0.1 to 0.15 cubic centimetres of this oil were, in general, injected during an interval of from five to eight days. After the lapse of some weeks, the injections were discontinued for some weeks, and so on, until about from 1.5 to 2 cc. of the gray oil were used. Prof. Lang stated that he had obtained excellent results with the injections of the gray oil. The good effect of this way of anti-syphilitic treatment especially became manifested in the case of syphilis of the nervous system, where the symptoms subsided in a proportionately

short time. There were no bad after-effects. When the technique of the injection was exactly observed, and the gray oil prepared in a convenient way, one could be sure that the reaction after the injections would be but very slight. The author and his assistants had but very seldom observed the presence of stomatitis. He had used the preparation in question for the last four years, and had to discontinue this treatment for only five times. The advantages in the use of the gray oil consisted, first, in the fact that only a small quantity of mercury had to be injected; secondly, in the possibility of an exact dosage, which was not the case in the use of the gray salve.

The indications for the use of the gray oil were quite the same as those for any mercurial treatment. The mercurial oil also admitted of a larger local application than the gray plaster; it could very advantageously be applied to gummatous cavities of the bones, and also to syphilitic processes in the nose, the pharynx, the ears, the larynx and the eyes.

Professor Fuchs showed a rare case of tuberculosis of the iris. The patient was a girl 6½ years old, and many of the family were the subjects of tuberculosis. The patient herself had successively suffered from measles, small-pox and scarlet fever; an inflammation of the eye of a tuberculous character occurred after the latter. The patient was well developed, and no abnormality could be proven to be present in the lungs. The cornea of the right eye was dim, and precipitates could be discovered at its posterior surface. The pupil protruded much outward, and its internal side was for the greatest part covered by a tumor which reached as far as the cornea. The tumor itself was composed of numerous small nodules of a gray-red color. This form of the tuberculosis was very rare and, in the strictest sense, it could neither be reckoned to the disseminated or the conglomerated tubercles of the iris. In the first one there were in the iris many disseminated and isolated nodules of a gray color, whereas in the second form the tubercle had the appearance of a neoplasm in which the composition of nodules could only be recognized by means of a loop. The case under consideration was to be looked upon as primary tuberculosis of the iris. The lecturer suggested that enucleation of the affected eye would protect the rest of the organism against infection.

Drs. S. Krauss and Fischer, of Budapest, gave in a recent number of the *Orvosi Hetilap* (a Hungarian medical journal), some interesting details on the therapeutic value of hyoscin, and tried to clear up some divergent opinions which are existing in this respect.

Sohr, Kobert and Köhlwetter, as well as other investigators, had used hyoscin in doses of from 1 to 2 milligrams without observing any dangerous complication; it was only Erb who had ob-

served symptoms of intoxication in doses of from $\frac{1}{16}$ to $\frac{3}{16}$ parts of a milligram. As to the dangerous after-effects of this drug, and with reference to the divergent opinions which existed in this direction, Dr. Krauss explained them by the suggestion that the experimenters had availed themselves of different preparations of the drug in question. Hitherto, the hydrobromide, the hydroiodide and the hydrochlorate of hyoscin were used; at the recommendation of Köhlwetter, the hydrochlorate of hyoscin ("hyoscinum hydrochloricum") was used in the "Landes-Irrenanstalt" of Budapest, and the drug was directly ordered from Merck. A 2 per cent. solution of "hyoscinum hydrochloricum" was used for subcutaneous injections in the beginning, half a Pravaz syringe-ful, hence the dose of 0.001 gram was used. Later on, 0.001 gram was injected in the morning and the evening. The injections (altogether 90 in number) did not cause any greater pain than other drugs, and they were not refused by the patient. No bad after-effect could be discovered, neither was any serious complication observed, though the drug was used for decrepit patients. The hyoscin was applied in all irritative conditions, viz.: in acute maniacal and hallucinatory irritations, in post-epileptic attacks of frenzy, and severe paralytic irritation. There was no opportunity for ascertaining the value of the drug in the case of paroxysms in delirium of the drunkard ("delirium potatorum") and melancholia, neither in the excessive irritability of the so-called "raptus melancholicus."

From the experiments hitherto performed it became already evident that the hydrochlorate of hyoscin excelled all the other respective remedies hitherto used, owing to its excellent sedative and hypnotizing effect. Its sedative effect invariably manifested itself, and in the acute maniacal irritative conditions its influence was even quite surprising. The patient who just before was in a condition of the highest hyperkinesis became quite paralyzed after one injection, and after the lapse of from six to ten minutes, or at the latest after fifteen minutes, the muscles entirely lost their function, and this condition, which bore a resemblance to the state of deep drunkenness, lasted for about twenty minutes, when the patient fell into a sleep of the duration of about from two to four hours. After awaking the patient remained quiet (tranquil) for about six hours. In the case of paralytics the effect was not so striking. The individuals attacked with mania broke down after the injection, as if they were thunderstruck, whereas the paralytics became only gradually more quiet, and in some cases they became affected with an amcenomaniacal humor. It had still to be mentioned that the hyoscin was used in such irritated patients in which the usual drugs, such as chloral, morphia, paraldehyde, either had no effect at all or only a little influence. Also in

patients suffering from agrypnia, and where the hypnotics, except paraldehyde, were not attended with any success, the hyoscin, in the dose of 0.001 gram, produced undisturbed sleep of from five to six hours' duration, though it at the same time gave origin to a little degree of giddiness and nausea. Paraldehyde was very ill supported by the patients, owing to its disagreeable taste and smell; moreover, it was very dear, and did not permit of an extensive application.

Appearances of intoxication did not occur one single time; circulation and respiration remained normal. Vomiting occurred once. The authors could not share in the opinion pronounced by Kühlwetter, viz.: that hyoscin could be administered only to robust individuals, as they had prescribed it to anæmic and emaciated patients without any harm. It was administered ten times to patients who, for several years, had suffered from tabes and progressive paralysis.

Hyoscin had no influence on the temperature, and the eye-pupils, in most of cases, did not undergo any change.

From all the observations now referred to it became evident that the excellent effect of hyoscin was beyond any doubt, and that it could not be compared with any of the sedatives hitherto known. The influence of chloral hydrate, as was known, was uncertain, and especially failed to manifest itself in the case of much irritated paralytics, and, on the other hand, its dosage could not be exactly determined. On one occasion 2 grams were not sufficient, and on another occasion this dosage was too large and attended with symptoms of intoxication. Moreover, it was known that in chronic psychoses which were combined with permanent irritation, the chloral hydrate was attended with several disagreeable after-effects, the least of which was that the patient became accustomed to the drug and that the dose had to be increased. Again, the use of morphia in psychical diseases was limited to only very few affections, and in most of the psychoses it was nearly without any effect, and properly exerted an influence only in the case of paroxysms of fear in melancholia. The value of the paraldehyde became impaired by its bad taste and smell, as well as by its high price. Hence, so far as we could judge from our present experience, the hyoscin had to play a great part in the therapy of the psychical diseases.

Its sure, rapid and complete effect rendered it superior to all other similar drugs; moreover, it was cheap, if we took into account the minimum doses which were required. Further experiments might detect some inconvenience, but in any case, the drug under consideration was worth being fully studied not only by the specialists, but also by the general practitioners.

The committee for the edition of the new "Pharmacopœia Austriaca" have completed their

work; the new Pharmacopœia will appear in the course of this year and become compulsory in the beginning of next year.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The College of Physicians and Surgeons of New York; the New Buildings; Changes in the Curriculum and Length of the Term—Death of Dr. Thomas T. Sabine—The Late Dr. Henry F. Quackenbos—Method of Dealing with Small-Pox—The Chimpanzee Called "Mr. Crowley," of Central Park—Fatal Dose of Chlorate of Potassium—The Visit of Professor von Eschsch, of Kiel.

The College of Physicians and Surgeons, the next session of which commences October 1, announces with satisfaction that the new group of buildings, given by the late Wm. H. Vanderbilt and his family and by Wm. D. Sloane, Esq., have amply fulfilled the high expectations formed of them as centres for improvement in medical teaching. For the session of 1888-89 and thereafter, it will be remembered, a preliminary examination is to be required of all new applicants for matriculation, with the exception of those who possess diplomas from recognized colleges or schools of science, or who can present satisfactory evidence of proficiency in the various subjects requisite for admission to the institution. With a view to elevating the standard of medical education, the Trustees and Faculty have also resolved upon important changes in the length of the session, the amount and character of the obligatory studies, the requirements for graduation, and the fees for instruction.

Beginning with the present season, the college year is henceforth to consist of a period of vacation, extending from Commencement to about the first of October, and of an annual session of between eight and nine months, extending from the latter time to the following Commencement, which will be held on or about the 15th of June. At the same time the absolute number of required didactic lectures is not to be increased; so that a greater number of hours each week will be available for other exercises. The work of all students who are candidates for the degree of M.D. will be distributed over three years of study, according to a prescribed curriculum, and as regards the requirements it is announced that candidates who are not already graduates in medicine of recognized institutions must have pursued the regular three years' curriculum at this college, or the regular curriculum of the second and third years, and such a course at some other medical school as shall have been recognized by the Faculty as an equivalent for the first year's curriculum. Graduates in

medicine of recognized institutions must have pursued at this college at least the regular curriculum of the third year, and all candidates, whether already graduates in medicine or not, must pass a satisfactory final examination in writing, which, in addition to the seven regular branches, will include "clinical studies." The examination in the topic of "clinical studies" is to comprise one question in each of the following subjects, set by the clinical professors thereof: Diseases of the mind and nervous system; diseases of the genito-urinary organs, including syphilis; diseases of children; diseases of the eye; diseases of the ear; diseases of the throat; diseases of the skin. With the exception, however, of such graduates in medicine as attend only the third year of the curriculum, candidates, if they so elect, are eligible for examination in any or all of the three branches, anatomy, physiology and physics and chemistry (and upon them only), on completing the first two years of the curriculum.

The necessary expenses for graduation, for a student who attends the curriculum during three years, are as follows: First year.—Matriculation, \$5; fee for all the required exercises of the year, \$150; anatomical material, \$1 each part.

Second year.—Matriculation, \$5; fee for the required exercises of the year, \$150; anatomical material, \$1 each part.

Third year.—Matriculation, \$5; fee for all the required exercises of the year, \$150; graduation fee, \$30.

The college has just met with a severe loss in the death of Dr. Thomas T. Sabine, who has been Professor of Anatomy since 1879, and who was a popular teacher, a skilful surgeon, and a most accomplished and genial gentleman.

The career of the late Dr. Henry F. Quackenbos, who recently died at his home in this city at the age of 69, was in many respects a notable one. Like his father, who was also a physician, he was born in New York, and both were graduates of Columbia College. He received the degree of M.D. from the College of Physicians and Surgeons in 1840, and soon afterwards went abroad, pursuing the study of his profession in London, Edinburgh and Paris. While residing in Paris he was appointed surgeon of a brigade commanded by Gen. Pellissier, afterward Duke of Malakoff, and served in the French campaign in Northern Africa against the Algerians. Returning to his native city in 1849, he distinguished himself by his heroic services while in charge of Bellevue Hospital during the cholera epidemic of that year. Dr. Quackenbos soon acquired a large private practice in New York, and his *clientèle* was made up to a considerable extent of members of the theatrical profession. He was honorary physician of the New York Dramatic Fund Association from its organization, and for many years he was the medical adviser and intimate associate of Edwin For-

rest; who, it is said, if taken ill while travelling through the country, would always send for Dr. Quackenbos to attend him, however great the distance might be.

In referring to the remarkably small number of cases of small-pox occurring in New York of late, although the disease has been more or less prevalent in some of the neighboring cities and towns, Mr. Bayles, President of the Board of Health, recently made the following statement: "I believe the reason for the singular exemption of New York to be almost wholly due to the system of isolation now in use, which is wonderfully expeditious. The moment a case is reported by the physician in attendance the inspector in whose district the case occurs is at once sent to look it up, and if he has any doubts about the character of the disease he sends immediately to the central office, when one of the expert diagnosticians is dispatched to his assistance. All the district inspectors are in telephone communication with the central office, so that no time is lost; and the period that elapses between the report of the case and the removal of the patient to the hospital is frequently not more than four hours." If, as is usually the case, the patient cannot be properly isolated at his own home, he is sent at once to the reception hospital on the East River, preparatory to removal to North Brother Island, on which are now located the hospitals for contagious diseases. The bedding and other effects are removed to the disinfecting house of the Health Department, and the disinfecting corps thoroughly fumigate the entire premises. Of course, the vaccination of those exposed to the risk of contagion is also carefully looked after.

"Mr. Crowley," the intelligent chimpanzee whose wonderfully human-like actions have for several years been the admiration of the crowds visiting the zoological department of Central Park, died about the first of September. He was presented to the Park in June, 1884, by Mr. Smyth, the American Minister to Liberia, who purchased him when at an early age from a Congo negress, who is said to have suckled him at her own breast. On his arrival in New York he was only twenty inches in height, and could be readily carried in a great-coat pocket. At the time of his death he was four feet nine inches in height. Not long before this his weight amounted to 110 pounds, but illness reduced this finally to 73 pounds. A most admirable portrait of him has been made by Mr. Frank Beard, the well-known animal painter. The picture represents the chimpanzee seated in an arm-chair beside a table, with one hand holding a copy of Darwin's "Descent of Man," and the other supporting his head, while the attitude and the countenance are indicative of the most profound meditation. Two skulls are in the foreground, and the picture bears the inscription, "Strange, isn't it?"

During the four years that Crowley was at the Park menagerie he had several severe attacks of pneumonia, and the greatest possible care was always taken of him, both in sickness and health. The autopsy was made the day after his death by Dr. William Gotheil, who found the animal very badly diseased. The left lung was practically useless, and was firmly bound down by old adhesions, while there were evidences of pleurisy in the right lung, and the immediate cause of death was ascribed to congestion of that organ. Abundant tubercular deposits were found in many parts of the body, notably the liver, and there was marked fatty degeneration of the heart. There were also evidences of an old peritonitis, and the lymphatic glands were in a state of chronic enlargement. The brain, which is to be thoroughly examined by Dr. E. C. Spitzka, was entirely healthy in its gross appearances, and weighed about one-third of that of the average adult human brain. The convolutions representing the functions of speech were four in number—considerably less than in the human subject.

Both the skeleton and the stuffed skin of the dead chimpanzee are to be mounted and placed on exhibition in the admirable collection of the American Museum of Botanical History, on the west side of the Park. A new section of this institution, which will ultimately be of immense size, is now in course of erection; the legislature having last year appropriated the sum of \$400 for the purpose. In the new building there will be a handsome lecture-room, with a seating capacity of 1500. During the past year a number of important additions have been made to the Museum, including the Lawrence collection of American birds, numbering 12,000 specimens; a collection of 4000 Brazilian birds, and the Elliot ornithological library, of over 1000 volumes.

A death has been reported here from chlorate of potassium, two half ounce doses having been taken in mistake for iodide of potassium.

Among the recent arrivals in this city are the eminent surgeon, Professor von Esmarch, of Kiel, and his wife, the Princess Henrietta of Schleswig-Holstein, who is a near relative of the present Empress of Germany. They are accompanied by their son, Dr. Ervin von Esmarch. They were met down the Bay by a number of friends, and escorted to the residence of Dr. Frederick Lange; and a few days afterward a reception was tendered the distinguished party at Terrace Garden. At this entertainment the Princess presented 1200 marks for distribution among the Schleswig-Holstein poor resident in New York. P. B. P.

MEDICAL EDUCATION OF THE LAITY.—*The New York Medical Journal* in a recent editorial on this subject says: What the laity need is not to be more thoroughly instructed in medical science, but to be taught to distinguish between the true and the false, between the charlatan and the honest conscientious physician.

Reply to the Criticism of Dr. Robert Newman.

Dear Sir:—Dr. Newman says:

1st. "Is it sound logic to condemn an operation and method because a *novice* (italics mine) has made a failure in a few cases, when surgeons of undoubted standing from all parts of the world have reported hundreds of successful cases?" etc.

I treated six cases in succession by electrolysis, and not one was benefited. After such a fair trial was I justified in wasting the time and patience of my patients any further? Treating a patient two months without improvement does not add greatly to one's reputation. Have not surgeons of still more undoubted standing from all parts of the world condemned the treatment? Need I repeat their names to Dr. Newman?

2d. "Why was not the cystitis treated first?"

It would be as logical to treat an acute inflammation of the eye caused by a foreign body and then remove the foreign body, as to try and cure the cystitis first and then remove the strictures. The cystitis was a *result* of the strictures.

3d. "Had the gentleman carefully read my papers he would not have made his paper a personal attack."

I deny the personal attack statement. I simply used the name of Dr. Newman (also one other) as being the exponent of a method that I had found by experience, although at first prejudiced in its favor, to be of no value. My experience conforms also to the experience of the first genito-urinary surgeons in Dr. Newman's own city. My paper was written from a purely scientific standpoint. Persons with a hobby are apt to be very sensitive.

4th. "I . . . do not enlarge the urethra to a certain theoretical size, but mark in my statements "cured," when the patient feels and is well, passes a free, unobstructed stream, and is satisfied with his condition to such a degree that he objects to any further treatment and enlargement, and does not desire a larger-sized urethra."

I do not claim that a patient should have his urethra enlarged to a "certain theoretical size;" every patient his own individual standard as can be demonstrated with the urethrometer, but "when the patient feels well, passes a free unobstructed stream, and is satisfied with his condition." I do not by any means concede that he is cured. I make that concession only when the bulbous bougie or urethrometer fails to discover a stricture. As long as a *stricture* still remains there is the exciting cause for a gleet or cystitis. Dr. Newman apparently leaves the patient to be the judge as to when a cure is effected.

5th. "It is easier to enter the urethra with the tapering instrument than with a six-sized larger egg-shaped bulb."

"Goodness Gracious!" and the doctor even

diagrams it for fear his readers could not comprehend so wonderful a problem. Some of us use steel sounds that are not tapering, so that the extended argument about tapering instruments is all wasted.

6th. "The next mistake Dr. Thomas makes, is in saying that some patients were discharged with their urethras admitting only a No. 14 French."

And then Dr. Newman, in the same breath, admits that one improved very slowly to No. 14 and something prevented his return. If I had more leisure time I would hunt up the record of the other case, but as the doctor drops one-half of his *casus* it is hardly worth my while to hunt up the other half.

7th. "Dr. Thomas does not state in his report of the single case, how he used the electrolysis, nor does he tell what his most approved apparatus was."

The battery I used was a McIntosh galvanic. My electrode bougies were those made by Truax & Co., and are identical, I believe, with those used by Dr. Newman. The electrode (negative) two sizes larger than the stricture was placed against the face of the stricture, the current turned on, beginning with one cell, and gradually adding cell by cell until the current was quite perceptible to the patient, and at the same time making steady but gentle pressure. Before removing the electrode the current was gradually diminished; séance lasting from fifteen to twenty minutes.

8th. "Candidly I do not envy any one who can use such language, and I leave it to my readers to surmise what animus has prompted him."

Any one reading my previous article can see at once that I was honest and after the truth—even an enthusiast. The "animus" requires no "surmise;" it is plain.

To show to what extremes some reporters may go, Mr. Editor, please permit me to give you this excerpt from a journal lying before: "Mr. H. M., merchant, æt. 28, has had stricture of the meatus and gleet for two years. This case was very slow in consequence of the *very great contraction* (Italics mine), and subacute inflammation setting in from the slightest manipulation. I finally disregarded the inflammatory condition, and with a flexible conical electrode bougie, No. 24 French, and 18 cells of a Stammers' battery, worked through, and thoroughly broke down the stricture. Quite a high grade of inflammation was set up, which soon subsided, leaving the meatus free from all contraction. . . . He has remained well up to this time (four years). This case illustrates the fact that electrolysis will substitute internal incision, even at the meatus."

Very great contraction means one of filiform calibre. To work through a stricture of this

kind with a No. 24 bougie at one sitting is almost incredulous, and under conditions when electrolysis is entirely contraindicated by the teachings of Dr. Newman. Did the electrode go through by causing absorption, or did it burn through, or did it go through *volens volens*?

J. D. THOMAS, M.D.

Pittsburg, Sept. 12, 1888.

MISCELLANEOUS.

MEDICAL SOCIETY OF VIRGINIA.—The Nineteenth Annual Session of the Medical Society of Virginia, will convene at 8 P.M., Tuesday, October 23, 1888, in Norfolk, Va. Dr. Herbert M. Nash, of Norfolk, Va., will deliver the *Address of Welcome*. Dr. Wm. T. Walker, of Lynchburg, Va., will deliver the *Annual Address to the Public and Profession*. Subject, "Moses and other Doctors." Dr. Benjamin Blackford, of Lynchburg, Va., will deliver the *President's Address*. Subject, "The Progress of Medical Education, and the Importance of the Study of the Physical Sciences in relation thereto during School Life."

The Society will nominate to the Governor of Virginia for appointment, as members of the Medical Examining Board of Virginia, for the term of four years, beginning January 1, 1889, thirty-two regular practitioners of medicine in Virginia, as follows: Two from the State at large, and three from each of the ten Congressional Districts of the State.

The night session will begin about 7:30 o'clock with the call for reports on advances in the several departments of the medical sciences. The following order will be observed until adjournment to Thursday morning when the call will be continued until this order is completed—no paper to exceed thirty minutes in reading:

Advances in Anatomy and Physiology.

Advances in Chemistry, Pharmacy, Materia Medica and Therapeutics.—In this Section the following paper will be presented: "The Carbon Compounds—Their True Place in the Treatment of Fevers; or the Particular Forms of Fever in which They are Indicated," Dr. S. K. Jackson, of Norfolk, Va.

Advances in Obstetrics and Diseases of Women and Children.—In this Section the following paper will be presented: "Conduct of Enceinte Women before and after Confinement," Dr. Wm. L. Robinson, of Danville, Virginia.

Advances in Practice of Medicine.—In this Section the following papers will be presented: "The Uric Acid Diathesis," Dr. J. Spotswood Wellford, of Richmond, Va. "The Development of Medicine, Dr. M. A. Rust, of Richmond, Va. "The Duty of the Doctor to his Patient Suffering under Malignant Disease," Dr. William W. Parker, of Richmond, Va. "Thirty-two Years' Experience as a Country Practitioner," Dr. Charles R. Cullen, of Richmond, Va.

Advances in Surgery.—In this Section the following papers will be presented: "Exploration of the Bladder for Obsolete Diseases of that Viscus," Dr. Hunter McGuire, of Richmond Va.—By invited guest, Dr. Milton Josiah Roberts, of New York, N. Y.

Advances in Ophthalmology, Otolaryngology and Laryngology.—In this Section the following paper will be presented: "Enlarged Tonsils—What Shall We do With Them?" Dr. Charles M. Shields, of Richmond, Va. "Improved Means of Diagnosis in Throat and Nasal Troubles, with Remarks on Treatment," Dr. Joseph A. White, of Richmond, Va.

Advances in Hygiene and Public Health.

Advances in Psychology and Neurology.

In addition to the above reports, by resolution adopted at the last annual session, Drs. Wm. W. Parker, of Richmond, Va., Dr. Wm. P. McGuire, of Winchester, Va., and

T. M. Bowyer, of Liberty, Va., were appointed a Committee to "Report a Record of All Deaths Known to have Occurred during the Past Five Years in this State from the Administration of Chloroform."

When this order shall have been completed, call will next be made for voluntary scientific papers, contributions and reports—titles of which have not been received in time to be assigned to any special department. All papers should be ready for immediate delivery to the Recording Secretary at the time of their presentation to the Society.

Dr. Landon B. Edwards will propose the following amendment to Section I, Article I, of the Constitution of the Society, relating to eligibility to Fellowship, etc.: After the word "surgery"—the last word of the Section—insert, "or who has not received, in due form, the certificate of having passed a satisfactory examination before the Medical Examining Board of Virginia."

The Profession of Norfolk and Portsmouth have arranged for suitable entertainment of their guests which will be named during the session of the Society. Dr. Alex. Tunstall, Norfolk, Va., is the Chairman of the Local Committee of Arrangements for this session.

Fraternal delegates from any of the recognized regular medical societies of the country will be recognized upon presentation of their certificates of appointment as such, and will enjoy all the privileges of the Session allowed to non-resident Honorary Fellows and invited guests. It is desired that they shall participate in the scientific proceedings of the session, either by reading papers or entering into the discussions upon papers read, cases reported, etc.

PROF. DIEHL read the report on "The Progress of Pharmacy," at the Third-sixth Annual Meeting of the American Pharmaceutical Association. The following excerpt will be of interest to the profession:

"It is clearly the duty of the pharmacists to attend to the preparation, dispensing, and sale of medicine, in which event he must, or should, conform to the code of ethics of the medical profession. The renewal of prescriptions is an evil for which the physician is equally responsible. The sale of patent medicines, while it can not be avoided, need not be encouraged by the pharmacist. The physician, on the contrary, should not whimsically designate the products of special manufacturers in his prescription, and he certainly should not supply the medicines needed in his prescription if such can be filled in the locality in which he resides. The professions of medicine and pharmacy are so intimately related that they can not afford to quarrel."

The *National Druggist*, commenting on the report, says: The discussion of the report was animated and earnest and was generally participated in, especial attention being given to the points touching upon the differences between pharmacists and physicians. The opinion seemed to be general that these differences were more apparent than real, and that all that was needed to heal the breach was a closer communion with and a better understanding of each other.

DR. S. D. MCINTOSH, the well-known electrician of Chicago, has been invited by Dr. Charles N. Hewitt, President of the American Public Health Association, to attend the next meeting of the Association to be held in Milwaukee, Wis., Nov. 20, 21, 22, 1888, so that members may avail themselves of his personal services in the use of the stereopticon with sunlight or oxy-hydrogen light, for the illustration of papers or addresses. Members wishing such illustration should communicate with Dr. Hewitt, Red Wing, Dak.

THE KIRK SESSION of the Glasgow Cathedral have divided the collection, made on the occasion of the recent meeting of the British Medical Association, between the Dunoon and Leuzie Convalescent Homes.

LIST OF PERMANENT MEMBERS.—The name of Dr. I. M. Harsh, of Griswold, Ia., was unintentionally omitted from the published list.

THE NEW MILITARY HOSPITAL at Alexandria, Egypt, contains 137 beds and is built on the site of the old Lighthouse Fort.

THE ILLUSTRATED MEDICAL NEWS is the title of a new weekly medical journal. It is published in London and the initial number appears to-day.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from September 15, 1888, to September 21, 1888.

By direction of the President, the Army Retiring Board at San Francisco, Cal., convened by War Department order dated July 20, 1886, published in S. O. No. 168, July 22, 1886, from Headquarters of the Army, is dissolved. Par. 1, S. O. 217, A. G. O., September 18, 1888.

By direction of the acting Secretary of War, the leave of absence granted Major Alfred A. Woodhull, Surgeon, in S. O. 148, June 27, 1888, from this office, is extended fifteen days. Par. 14, S. O. 218, A. G. O., September 19, 1888.

By direction of the acting Secretary of War, Capt. Robert J. Gibson, Asst. Surgeon, is relieved from duty at Alcatraz Island, Cal., and will report in person to the President of the Army Medical Examining Board, New York City, on October 16, 1888, for examination for promotion. On completion of his examination Capt. Gibson will proceed to Ft. Trumbull, Conn., and report for duty to the commanding officer of that post, reporting by letter to the commanding General Div. of the Atlantic. Par. 13, S. O. 217, A. G. O., September 18, 1888.

By direction of the acting Secretary of War, First Lieut. Edward R. Morris, Asst. Surgeon, is relieved from duty at Ft. Thomas, Ariz., and will report in person to the commanding officer, Ft. Shaw, Mont., for duty at that post, reporting by letter to the commanding General Dept. of Dak. Par. 14, S. O. 217, A. G. O., September 18, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Two Weeks Ending September 22, 1888.

Asst. Surgeon George A. Lung, ordered to receiving ship "Vermont," Navy Yard, New York.

P. A. Surgeon A. G. Cabell, ordered to the Naval Hospital, Chelsea, Mass.

P. A. Surgeon J. W. Baker, detached from the Naval Hospital, Chelsea, Mass., and to the "Palos."

P. B. Surgeon Philip Leach, detached from the "Palos" and granted six months' leave abroad.

Surgeon M. A. Simons, detached from Naval Academy and wait orders.

Surgeon G. E. H. Harmon, ordered in charge Naval Academy.

Asst. Surgeon Geo. McC. Pickrell, detached from "New Hampshire" and to the "Ossipee."

Asst. Surgeon W. F. Arnold, ordered to the "New Hampshire."

Asst. Surgeon C. P. Henry, detached from the "Ossipee" and granted sick leave.

Asst. Surgeon F. J. B. Cordeiro, promoted to P. A. Surgeon.

Medical Inspectors J. C. Spear and A. C. Rhoades, placed on the retired list September 14.

CORRIGENDUM.

In the issue of September 22, p. 429, appears a communication on "The Ethics of Marriage." The signature should read Hunter H. Powell, instead of "Rowell."

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, OCTOBER 6, 1888.

No. 14.

ORIGINAL ARTICLES.

SHOULD NOT THE NATIONAL GOVERNMENT DEFEND OUR PORTS AGAINST THE NATIONAL ENEMY, CONTAGIOUS DISEASE?

Read in the Section on State Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BENJAMIN LEE, A.M., M.D., Ph.D.,

OF PHILADELPHIA, PA. SECRETARY OF THE STATE BOARD OF HEALTH OF PENNSYLVANIA.

To ask this question ought to be to answer it. To one who views it from the broad standpoint of a humanitarian nationalism it would seem that there can be but one response, and that an affirmative one.

The only argument which has been adduced against it is, that the power of enforcing quarantine is a police power, and as such, reserved by the constitution to the several sovereign States. I confess myself, unable to find any such reservation. On the contrary, Section 8 of Article 1, of that immortal document, declares that "Congress shall have power to provide" not only "for the common defence" but for the "general welfare of the United States," "to regulate commerce with foreign nations," and "to make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this constitution in the government of the United States or in any department or officer thereof." More than this, the several States are expressly forbidden to "enter into any agreement or compact with a foreign power." Now, I am quite willing to grant that the enemies against which a "common defence" is thus guaranteed, are the armies and navies of foreign nations and not bacilli or cryptogams, although in a more highly advanced state of civilization a liberal interpretation might even include these latter more formidable foes; but I ask:

First. What possible interest is there which more nearly concerns "the general welfare" than the protection of the entire nation from the introduction of pestilence from abroad?

Secondly. How is it possible to administer quarantine relations without, to a greater or less extent, often to a very serious extent, interfering

with the "commerce with foreign nations," from which the States are expressly bidden to keep hands off? and

Thirdly. In what way can such a reciprocal understanding be arrived at between the government of any State, still less of any City, and foreign governments, as the rapidity and immensity of modern intercommunication makes absolutely essential if the transportation of contagions is to be brought under control, when the said State and municipal governments are forbidden in so many words "to enter into any agreement or compact with a foreign power?"

Internal hygiene, the making of all laws which shall promote health, protect life, and prevent the transportation of contagion within the limits of each State, this certainly is a right reserved to each State by exclusion; but when it comes to the question of common defence against a common enemy from without, which more persistently and terribly than any other, threatens the "general welfare," an appeal to the constitution appears, both by analogy and by literal construction, by the letter as well as by the spirit, to lead to but one conclusion, viz., that this latter power inheres in the general government.

This question has, however, been practically decided by Congress, in placing a fund at the disposal of the President, to be used at his discretion in taking measures to prevent the introduction of contagious diseases in especial emergencies, in assigning to a subordinate Bureau of the Treasury Department the duty of establishing quarantine stations at certain points under certain conditions, and of requiring the consular representatives of the nation to report the progress of contagious diseases in foreign countries to that Bureau.

We may, therefore, consider that objection as finally tabled, and proceed to discuss the question whether the National Government, *having the right* to assume control in this matter, is not *in duty bound* to exercise it. In considering this subject I shall not scruple to avail myself of the admirable work already done, contained in the following papers, viz: "Practical Recommendations for the Exclusion and Prevention of Asiatic Cholera," an address delivered by Dr. John H. Rauch, Secretary Illinois State Board of Health,

before the National Conference of State Boards of Health at St. Louis in October, 1884; "Coast Defences against Asiatic Cholera," a report of an Inspection of the Atlantic and Gulf Quarantines between the St. Lawrence and the Rio Grande by the same author; "Report of the Committee of the College of Physicians of Philadelphia, appointed to investigate the efficiency of our Quarantine arrangements for the exclusion of Cholera and epidemic diseases," an Editorial Article from the *Medical News*, of Philadelphia, Nov. 5, 1887; An Address from a Special Committee of the College of Physicians of Philadelphia to the Medical Societies of the United States, concerning the dangers to which the country is exposed by the ineffectual methods of Quarantine at its Ports, and in regard to the necessity of National Control of Maritime Quarantine; and a "Report of the Committee on Epidemic Diseases" of the Senate of the United States.

If it should be found on investigation that, under the system which leaves the management of quarantine to local authorities, whether State or civic, every quarantine station without exception has been generously supplied with everything necessary in the way of extensive grounds, so situated as to make isolation easy and complete; of commodious buildings for the reception, detention and observation of suspects, and well-arranged and ample hospitals for the treatment of the sick; of establishments and apparatus for the complete and rapid disinfection of both effects and vessels; we might conclude, simply from a sanitarian standpoint, that federal interference was uncalled for. If, on the other hand, we find that, except possibly in a single instance, not one of these conditions has been discovered to exist, we are forced to the conclusion that neglect of this duty on the part of the government is longer inexcusable; and if, moreover, we find that in the mature opinion of some of the ablest sanitarians and physicians in the country, it is impossible from the very nature of things that these favorable conditions could invariably be presented under State and local management, such neglect becomes a folly and a crime. In reference to this last point, Dr. Rauch says:

"With two or three exceptions, no port in the United States has adequate facilities for the proper administration of quarantine. Such a system as was inaugurated by the National Board of Health, and which is the only quarantine contemplated in these remarks, involves the removal of an infected or suspected vessel out of the track of commerce; the segregation of her sick from the well; the proper care and shelter of both these classes; the necessary disinfection of infected cargo, and the purification of the vessel; and the release of vessel, cargo and persons, so soon as they have been rendered safe and free from the danger communicating disease.

"This is very different from a mere quarantine of detention. It is the American quarantine of sanitation, a common sense quarantine, which aims to prevent the introduction and extension of contagion, not by merely arresting it at a given point and there leaving sick and well at its mercy until, the susceptible material having become exhausted, no more cases of the given disease occur; but by removing the susceptible at once from its influence, and then destroying it and the conditions necessary for its existence by scientific methods of disinfection and purification.

"To do this, however, requires a quarantine plant and facilities far beyond the means of any but the largest ports, supported either by abundant quarantine fees or by adequate appropriations from the State or municipality. But cholera may obtain access at a small port as well as a large one, and hence the necessity for the Refuge Stations above indicated."

And later in the same address, "Sooner or later the National Government will be compelled not only to assume supervision of exterior quarantines, but to provide for a permanent system of coöperation with State and local governments in the administration of inter-State sanitation; in order, on the one hand, to prevent the introduction of exotic epidemic diseases, and, on the other hand, to prevent their spread from State to State along the great international highways of travel and commerce. *This is a National duty.* It is one that the *National Government only* can adequately discharge, and its expense is, equitably, one which should be defrayed *from the National Treasury.*"

The report of Dr. Rauch's tour of inspection is already a classic. It goes without saying that, while he found much to commend in the devoted and painstaking attention of individual officers to quarantine duties, he discovered, with very few exceptions, an almost entire absence of all the essentials of a thoroughly equipped quarantine station. Commenting upon this he says:

"During all this time, from the earliest date to the present, the control of quarantine has remained entirely under the jurisdiction of State and local authorities, except during the brief period in which the National Board of Health exercised its limited quarantine powers under the act of 1878, and which expired in 1882. It is this absence of adequate National health authority and legislation, and the fact that, in such absence, the maritime quarantines are controlled and administered by State and local authorities—resulting in diverse, and frequently conflicting, regulations and requirements and, of necessity, in a tendency to limit precautions to their own individual interests, commercial as well as sanitary—which throw upon interior States the responsibility of fully informing themselves of the strength or weakness of these outposts, in order to know where to an-

ticipate danger and how to make their own preparations to meet it.

"At its last session, Congress appointed a Commission to examine and report upon the measures necessary for the defense of our seacoast against a foreign armed enemy, and a distinguished publicist and statesman, Mr. Tilden, has recently urged this as a paramount duty of the Government. Millions of dollars have already been expended for such defense, and millions more will probably be forthcoming to meet this possible contingency. But the assaults of foreign contagion are not a contingency. They are actual events, and during the past twenty years they have cost the country an aggregate loss of life only less than that of the great war immediately preceding. Every sanitarian and many of our leading statesmen know that this actual and ever-recurring loss is wholly and entirely preventable by the expenditure of a sum which sinks into utter insignificance before the millions which will be appropriated for the protection of our coasts against a possible future danger.

"But thus far neither sanitarian nor statesman has been able to overcome the petty jealousies of individuals, communities, and of States themselves, so as to secure the legislation necessary to remedy even the present confusion."

Early last autumn two or more cholera-infected ships lay in New York Harbor, while the disease was spreading with considerable rapidity among the passengers who had been disembarked upon Hoffman's Island for observation. Impressed with the gravity of the situation, the College of Physicians of Philadelphia, one of the most venerable and least aggressive of American medical societies, on the 5th of October, appointed a committee "to consider the present danger of the importation of cholera into this country, and to secure concerted action among the medical societies of the land in urging upon the State and National authorities the adoption of a uniform and efficient system of quarantine for all exposed ports." This committee, consisting of Drs. J. C. Wilson, Chairman; E. O. Shakespeare, late U. S. Cholera Commissioner to Europe; and Dr. R. A. Cleemann, late member of the Philadelphia Board of Health, did its work thoroughly and well, and reported its results fearlessly and impartially.

It took up two main questions:

1. What are the requirements of an efficient quarantine against cholera?

2. To what extent do the existing arrangements at the Ports of New York, Philadelphia and Baltimore fulfil these requirements?

Their reply to the first of these questions, taken from an editorial in the *Medical News* of October 15, sums up these requirements so completely and concisely that I make no apology for reproducing it in full:

"Measures of prevention, to give the greatest possible guarantee of success in extinguishing an incipient epidemic of cholera, should, in the first place, be based upon the most exact knowledge we possess of the cause, mode of attack, and manner of spread of the disease; and, in the second place, these measures should be intelligently, thoroughly and rigidly enforced.

"What are the considerations involved in the first category? Probably nine-tenths of intelligent and experienced physicians all over the world, even including those of India, have for years admitted that there is most convincing proof that the active cause of the disease is a specific, material, living entity, of extremely minute size, endowed with the power of self-propagation, and of exceedingly rapid multiplication in enormous numbers; that among animals it naturally attacks man alone, assailing him only by way of the intestinal canal; that the evacuations from the bowels contain the active cause of the disease, and that when this agent in any manner—as through drinking-water, milk, food, the handling or washing of contaminated personal effects, etc.—reaches the intestines of another susceptible person, the disease may be thereby transmitted from the sick to the healthy; that the active agent exists in the dejecta of the lightest and most imperceptible, no less than in the severest and most deadly forms of the disease, and is known to be transportable from place to place through the movements of man and his personal effects.

"Proceeding from this basis, logical deduction and common experience alike demonstrate the absolute necessity and efficiency of such measures of prevention as the following:

"a. Speedy recognition and isolation of the sick; their proper treatment; absolute and rapid destruction of the infectious agent of the disease, not only in the dejecta and vomit, but also in clothing, bedding, and in or upon whatever else it finds a resting-place.

"b. The convalescents should remain isolated from the healthy so long as their stools possibly contain any of the infecting agent; before mingling again with the well they should be immersed in a disinfecting bath, and afterward be clothed from the skin outward with perfectly clean vestments, which cannot possibly contain any of the infectious material.

"c. The dead should be well wrapped in cloth thoroughly saturated in a solution of corrosive sublimate, 1 to 500, and without delay, cortege, or lengthy ceremonial, buried near the place of death in a deep grave, remote as possible from water which may, under any circumstances, be used for drinking, washing, culinary, or other domestic purposes. (Cremation, of course, is by far the safest way of disposing of cholera cadavers.)

"d. Those handling the sick or the dead should be careful to disinfect their hands and

soiled clothing at once, and especially before touching articles of food, and drinking or culinary vessels.

"e. In the case of maritime quarantine, the well should be disembarked and placed under observation in quarters spacious enough to avoid crowding, and so well appointed and furnished that none will suffer real hardships.

"f. Once having reached the station, those under observation should be separated in groups of not more than twelve to twenty-four, and the various groups should under no pretext intermingle; the quarters for each group should afford stationary lavatories and water-closets in perfect working condition, adequate to the needs of the individuals constituting the group, and supplied with proper means of disinfection. There should be a bed raised above the floor, proper coverings and a chair for each member of the group, each person being required to use only his own bed. There should be a common table of sufficient size to seat around it all the members of the group, who should be served their meals from a central kitchen, and with table furniture belonging to the station and cleaned by the common kitchen scullions.

"g. Drinking-water, free from possible contamination and of the best quality, should be distributed in the quarters of each group, as it is needed, and in such a manner that it is received in drinking-cups only; there should be no water buckets or other large vessels in which handkerchiefs, small vestments, children's diapers, etc., can be washed by the members of any group.

"h. Immediately after being separated into groups in their respective quarters, every person under observation should be obliged to strip and get into a bath (a disinfecting one is preferable), and afterward be clothed with fresh, clean vestments from the skin outward. Every article of clothing previously worn should be taken away and properly disinfected.

"i. Then all of the personal effects should be at once removed to a separate building, washed—if possible—and thoroughly disinfected, or, if necessary, destroyed. After disinfection they should be temporarily returned to the members of groups, when occasion requires a further change of clothing.

"k. Under no circumstances whatever should washing of clothing by those under observation be permitted. All used clothing should be first thoroughly disinfected (by boiling, when possible) and then should be cleansed, the disinfection and washing being done by a sufficiently trained and absolutely reliable corps of employes supplied with adequate appliances.

"l. All of those under observation should be mustered in their own quarters and be subjected to a close medical inspection, *while on their feet*, at least twice every day, in order to discover and

isolate as soon as possible new cases which may develop; and, of course, the clothing and bedding of these new cases should be treated without delay in the manner already mentioned. In the meantime a watch should be set over the water-closets, for the purpose of discovering cases of diarrhœa, and when discovered such cases should be temporarily separated from the rest; they should receive judicial medical attention at once, and precautions should be taken as if they were undoubted, but mild, cases of cholera.

"m. The quarters should be kept thoroughly clean, and every surface upon which infectious material could possibly be deposited, including the floors, should be washed with a strong disinfectant twice daily, and oftener when necessary; evacuations from the bowels should be passed into a strong disinfectant, the hopper of the closet should be then flushed, and finally drenched with a quantity of the same disinfectant.

"n. For the proper attention to the sick, there should be two or more competent and experienced physicians, assisted by a sufficient corps of intelligent and efficient nurses, with hours of duty so arranged that a physician with a sufficient number of nurses be in constant attendance in the wards of the hospital.

"o. For the prompt recognition and separation of new cases, their temporary medical attention, the proper treatment of discovered cases of diarrhœa or cholera, and of other maladies, and the immediate correction of every insanitary practice or condition by constant, vigilant and intelligent supervision, there should be at least two or more competent and experienced physicians, with hours of service so arranged that a physician is on duty night and day among those under observation; and he should have subject to his orders, at any and every moment, a sufficient and efficient corps of nurses and laborers to carry out properly and promptly his directions.

"p. In order to prevent the intermingling of the various groups, to enforce obedience and order, and to make it absolutely impossible for the quarantined and their personal effects to have any communication with the exterior, a well organized and sufficiently large police corps should patrol the borders of the stations and the buildings day and night.

"q. Any group among whom there has developed no new cases of cholera, or of choleraic diarrhœa, during the preceding eight or ten days, may be regarded as harmless, and allowed to leave quarantine after each one is finally immersed in a disinfecting bath and re-clothed with clean garments from the skin outward; the garments removed being destroyed, or thoroughly disinfected and cleansed as above indicated.

"As yet, no reference has been made to the crew, ship, and cargo. What has been said of the treatment of those under observation, applies

to every one of the ship's inhabitants. The observation, isolation, and cleansing of the crew and their effects, could safely be performed aboard ship if necessary. The ship should be thoroughly cleansed and disinfected, particular attention being given to the quarters of the emigrants and crew."

In regard to the second inquiry, it must be observed that it refers to the three most important ports of entry of the Middle States, if not of the country, and to those which are in most immediate and constant communication with the whole grand interior chain of lines of travel and traffic. And while I cannot accept the conclusion that "there is no reason to believe that the conditions of other ports of entry upon our Atlantic and Gulf coasts are in any respect superior," yet it must be admitted that the possible exceptions to this sweeping condemnation are extremely few. Passing over the minutia of the report of these inspections, which should be carefully read by every practical sanitarian, I make a few extracts from the general conclusions arrived at:

"It is evident that the quarantine establishments at Philadelphia and at Baltimore fail in the most essential requisites of the necessary number of properly equipped buildings for the isolation and observation of a large number of immigrants."

This is all the Committee say with regard to these ports. Could condemnation be more utter and complete. Its very brevity is appalling. Its language is very nearly that of a letter addressed by the speaker to the Board of Health of Philadelphia a short time previously, which says, "Permit me, however, at the risk of seeming pertinacity, again to call your attention to the *entire inadequacy of the provisions made by the State authorities* for coping with a similar emergency in our own port." They "are those of nearly a century ago, when the present metropolis of Pennsylvania was but a country town. What might have been the consequences to her teeming population had the ship 'Alesia' ascended the Delaware river to Chester, instead of anchoring off Sandy Hook, it is not pleasant to contemplate." New York, however, had a plant of sufficient dimensions to make it and its administration worthy of notice in detail. But so insufficient were the precautions and so defective the provisions there found, that the Committee felt compelled to record their verdict that,

"It would seem that if the importation of immigrants directly from a European port notoriously infected, is not to be temporarily prohibited as a necessity of public safety, or if the treatment of these immigrants after their arrival at the New York quarantine station is not to be immediately

and radically improved, our protection against an epidemic at the present time must rest mainly upon the fortunate circumstance of the near approach of a season in which the disease does not usually spread. The continuance of cholera among the passengers of the 'Alesia' so long after their removal to the station of observation, in itself demonstrates the inefficiency of the measures which have been adopted and enforced for its extinguishment there. Although we have not yet heard of the development of the disease anywhere on the main land, nevertheless, in view of the almost uncontrollable tendency of cholera to spread at times, and of the original insufficiency and the present faulty constitution of the police force on Hoffman Island, we feel impelled to believe that the immunity up to the present time has been owing to singular good fortune, rather than good management."

The report concludes nearly as follows: "It is natural, after having made our comments on the defects of the quarantine stations we have described that we should endeavor to point out their causes and probable remedy. There is one cause so prominent that we may dwell on that alone. It is the great expense. Were it not for the question of money there would have been physicians constantly in attendance at the New York station, and, consequently, better management and discipline would have been maintained, while at Philadelphia and Baltimore there would have been adequate establishments provided for the isolation and observation of large bodies of immigrants."

Municipalities and States are wont to scrutinize every dollar of their money appropriations, bringing their expenses down to the closest living limit. Quarantine in this country being, as a rule, enforced mainly against yellow fever and smallpox, a mistaken economy has caused no provision to be made for the more perfect establishments absolutely required for protection against cholera.

Philadelphia, Baltimore, and other ports of a more limited commerce, are unable to spend as much on their stations as is New York, with its large revenues from that source, yet an inefficient quarantine at any station exposes the whole country to the dangers of the importation of disease. But it is manifestly unfair that a single municipality or State should defray the expense of protecting the whole public.

How, then, can we have equally complete stations all along the coast? We believe that this can be effected by putting quarantine into the hands of the National Government.

Continuing its valuable labors, the committee proceeded to draw up "An address to the Medical Societies of the United States concerning the dangers to which the country is exposed by the infelicitous methods of quarantine at its ports, and in regard to the necessity of National control of

Maritime Quarantine." This address is based upon the combined results of Dr. Rauch's investigations and its own, and it aptly calls attention to the fact that an "inspection made during seasons of comparative quarantine inactivity" must of necessity be inadequate and misleading, and calculated to foster a false sense of security. Under the pressure of the emergency of a present contagion and thousands of suspects, glaring deficiencies instantly manifest themselves which were before unthought of. The general propositions submitted in the address, as a result of the consideration of existing conditions, are as follows:

First. "It is impossible adequately to protect the public health of the country against the importation of epidemic diseases by independent local maritime quarantine establishments."

Second. "A National system of quarantine is necessary."

Third. "A National organization would secure advantages not attainable by independent local quarantine establishments, however complete."

Among the subsidiary statements with which they reinforce these theses, I note the following:

"There is always great difficulty in obtaining sufficient appropriations of public money to defray the expenses of the necessary quarantine establishments and their proper maintenance. It is only possible, during periods of threatened invasion, to procure the considerable sums of money necessary for these purposes, whilst in the interim the money expended is greatly inadequate, though large sums are constantly needed. When the invader is at our gates it is often impossible to plan, construct or repair, and properly equip and garrison an efficient line of defences.

"Rival political and commercial interests are inimical to the perfect protection of the general public by independent and local quarantine.

"It is but natural that municipal organizations should, in looking after their own interests, pay little regard to the welfare of distant communities.

"In this connection may be noted the indisposition and failure on the part of local quarantine officers to notify the authorities interested of the arrival of emigrants from infected localities. Notwithstanding the frequent paramount interest of inland communities in the efficiency of the establishment and administration of quarantine at the seaboard, the local authorities of the latter frequently evince an unreasonable jealousy of any sort of investigation or suggestion looking to the general welfare.

"The benefits of quarantine inure to the welfare of the whole country; therefore, it is just that money should be as freely expended when necessary at one port as at another, without respect to their relative commercial importance. It is manifestly unfair that the seaboard cities and States should, as at present, be obliged to bear the entire expense of quarantine establishments

designed to protect the inhabitants of every region of the vast territory of the United States.

"A National quarantine, properly administered and conducted by trained officials accustomed to deal with contagious and infectious diseases, would tend to prevent panic, to allay undue anxiety, and to favor a reasonable sense of security.

"Experience has shown that much needless alarm, as well as preventable danger, arises upon the appearance of an unfamiliar epidemic disease at quarantine stations; as when cholera has shown itself at New Orleans or New York, or yellow fever at Philadelphia or Boston. A National quarantine would go far to do away with the necessity for vexatious temporary interstate quarantines, which so seriously disturb inland trade.

"A National quarantine system, directed in such a manner as fully to meet the requirements of existing sanitary knowledge, would not adversely disturb any commercial interest. It would, on the contrary, do away with many of the embarrassments incident to maladministration of existing local regulations. For example, the healthy passengers of the Italian steamship *Alesia* were detained at quarantine in New York harbor for a period of fifty-eight days, while under an efficient system uninfluenced by needless fears, those of them who were free from disease could have been safely liberated in ten days at least."

The committee thus sums up its conclusions:

"*Summary.*—Under the present system of local and independent maritime quarantine, the necessary quarters for the detention of large numbers of immigrants arriving in a suspected vessel, are either entirely wanting, or, if at hand, are deficient in equipment or administration, or both. It is possible, however, that one port well governed and rich from prosperous commerce, may make up these deficiencies; yet what would this avail even to that community itself, if a neighboring port, only a few hours distant by rail, failed to exclude epidemic diseases? The front door might be doubly barred and bolted, but the enemy would find an easy passage through the defenceless rear. As recent examples thereof may be instanced the danger of an epidemic of yellow fever to which the little town of Biloxi, in Mississippi, exposed in 1886 not only the interior States, but even the city of New Orleans itself, now apparently so well protected by her own system of maritime quarantine; and that to which, in 1887, the defenceless condition of the small port of Tampa, in Florida, exposed not only that State, but others.

"This want of uniformity in the quarantine defences along our coast must necessarily exist when different authorities supply the money for maintaining the several stations, and the purse of one port is longer than that of its neighbor. Another money difficulty is found when the appropriation for the same station comes, as it may, from the coffers of both city and State; possible difference

of opinion in the municipal council and the State legislature is likely to endanger the sufficiency or change the direction of the funds to be expended. In any case, the danger to a single port of entry, or even to a single State, is by no means the same as that which threatens the country at large, and communities are not likely to make a larger expenditure than is needed for their own defence. As an illustration of the difference in the conditions of danger which may exist between the port of entry and the interior of the country, may be mentioned the passage of immigrants with infected baggage. The immigrants may come from a healthy port and in a healthy ship, and with the poison securely imprisoned in their baggage, will pass through the port of entry with perfect safety to its inhabitants; the danger will begin in that far interior where the baggage is opened. It is of no interest to that port to have the baggage disinfected, and it is carried on to some uncertain place unhindered to do its fatal work. And here may be pointed out the rather peculiar position in which America finds itself, in attracting to its shores hordes of immigrants from the older countries. There is in municipalities little disposition to spend more even than is called for to satisfy immediate wants; remote necessities are seldom provided for. A quarantine that is not always in use, is not always ready for use. It is only when danger is at its gates, and when, perhaps, it is too late for protection, that a city wakes up to its defenceless state. Municipalities are selfish, and knowing that with the trader quarantine is not a favorable institution, and that it is his tendency to sail into that port where the quarantine is most lax, they are assailed with a sore temptation to wink at the neglect of proper precautions if, by so doing, they may circumvent a possible commercial rival.

"In the opinion of the committee, the difficulties mentioned can only be overcome by the adoption of a maritime quarantine under the control of the National Government."

Commenting upon this report, in its issue of Nov. 5, 1887, the *Medical News*, of Philadelphia, pertinently says:

"As the testimony of thoroughly competent and independent observers, a committee of one of the most conservative and respected medical bodies in America, it carries with it the weight of conviction, and conclusively proves the urgent necessity of a radical reform in our method of guarding the country against devastating epidemics with which we are, through foreign communications, from time to time threatened.

"Should the germs of cholera finally escape or be permitted to pass beyond quarantine, they may not limit their onslaught to the nearest city, but may spread over the land and ultimately carry sorrow and loss to homes hundreds, and even thousands of miles distant from the port where they entered.

"The abuses and the faults of an exclusively local quarantine, such as at present exists, are so natural and intrinsic that we should, by this time, acknowledge the absolute need of a National protection of the general welfare by a National maintenance and administration of quarantine."

Meantime, the entire country appears to be waking up to a sense of the urgent need for immediate and definite action in the direction indicated. The Senate Committee "on Epidemic Diseases, in relation to Seaboard Quarantines" has had under consideration during the present session the following bills, resolutions and memorials:

Senate Bill 665, "To establish a quarantine station at the port of San Francisco;"

Senate Bill 1641, "To establish a permanent quarantine station at or near Cape Charles, Virginia;"

"Resolutions of the Legislature of the State of Virginia in the nature of a memorial, asking the establishment of a quarantine station at Cape Charles;

"Resolutions of the Board of Trade of Chester, Pa.;

"Petition of the Board of Health of Rockford, Ill.;

"Resolutions of the Board of Health of Charleston, S. C.;

"Petition of the Medical Society of San Diego, Cal.; and

"Resolutions of the American Public Health Association;

"All urging the establishment of national quarantine at the points of danger upon the Gulf and seacoast."

The Committee expresses its belief "that it is the duty of Congress to so regulate commerce as to prevent the introduction of contagion from foreign countries into the United States, and has therefore reported, with favorable recommendation, an original bill providing for the establishment of seven thoroughly equipped quarantine stations in addition to the one already provided for at the mouth of the Mississippi river, viz: at the Delaware Breakwater; Cape Charles, Va.; Sapelo Sound; Key West, Fla.; San Diego, Cal.; and Port Townsend, Oregon.

"The estimated aggregate cost of construction and equipment of these quarantine stations, including the one at the mouth of the Mississippi river, is \$489,500, and the estimated aggregate annual cost of maintaining them is \$93,000.

It is not conceivable that when once the National Government has committed itself so far both in policy and expenditure, it will long delay the extension of this system northward, and the making it uniform throughout the entire coast line. Of course there will be differences of opinion, as to whether the bureau into whose hands would fall the superintendences of these

stations under the existing law, is the appropriate one, and whether the preservation of the public health is not an interest of sufficient magnitude to entitle it to a department of its own. But when such substantial safeguards are offered us, it would not be the part of wisdom to reject them on merely theoretical or sentimental grounds. Consider for a moment the unprotected condition of the Delaware river as revealed in the reports referred to; ascending the bay and river a distance of nearly 80 miles before the Pennsylvania or Philadelphia quarantine station is reached, through a populous country, passing numerous villages, and two considerable cities, with no other restrictions than the local regulations of the coasting trade; the Philadelphia quarantine station situated close to a large and rapidly growing city, whose Board of Trade have already taken the alarm and protested in a memorial to Congress against the dangerous contiguity; and yet, both the State of Pennsylvania and the City of Philadelphia are utterly powerless to remove it to a better and more distant location, from the simple fact that the boundary of the State is only a few miles lower down the river, and the entire intervening distance along the river bank is one continuous settlement. The only proper site for a quarantine station is within the limits of the little State of Delaware, and the expenditure necessary to establish and maintain a properly equipped station for the protection of Pennsylvania, New Jersey and the "parts beyond" would drive her into immediate and hopeless insolvency. There are but two solutions of this pressing problem: Either the National Government must promptly establish a well-appointed quarantine down the bay, or the three States of Pennsylvania, New Jersey and Delaware must form a tripartite alliance, and unite in defraying the expense of protecting themselves and the nation against their common foe. It is a question, however, whether this would not be establishing an *imperium in imperio* which would be more defiant of constitutional restriction than the federal interference for which it would be a substitute.

In conclusion, I beg leave to offer the following resolution:

Resolved, That the Section on State Medicine respectfully suggests to the American Medical Association, the importance of formally urging upon the National Congress the duty of at once assuming entire control of maritime quarantine, and of taking immediate measures to make such quarantine effective before the advent of hot weather.

DR. J. B. HAMILTON, Surgeon-General U. S. Marine Hospital Service: Let us consider for a moment the actual state of affairs; the condition of the countries quarantined against. The purification of Calcutta would only purify the local

region; Bombay and the entire Presidency was as much infected with cholera as Calcutta. The time will come when the International action consequent upon International sanitary conferences will alleviate this condition, as the quarantine which had been established at the Red Sea entrance of the Suez Canal, and which was continued by recommendation of the last International Sanitary Conference. Public sentiment would prevent the existence of a cholera breeding spot at Calcutta, and one of yellow fever in Cuba. In the meantime, shall the National or local Government do the work in this country?

Where the commerce was large enough for the revenue from the quarantine inspection service to support it, the State would wish no change made. But when, as at Philadelphia, Pennsylvania would have to enter into a treaty with New Jersey and Delaware, in order to enforce quarantine, it seems to me the intervention of the National Government would be preferred. Vessels coming to Delaware Breakwater with small-pox cases on board left them at Lewes, Delaware, where they took the train and proceeded to the heart of the city of Philadelphia. To-day no perfected quarantine existed on the Pacific coast. Petition after petition has come to the Treasury Department, requesting interference in behalf of passengers detained on infected vessels. A year or two ago yellow fever patients were found walking in the streets of San Francisco. Even now cholera is in Chili. It was introduced into South America in a criminal manner; a high official wishing to land from an infected vessel, and cholera patients went ashore with him.

Regarding the constitutionality of Congress to enact epidemic laws, this question has arisen under the very bills referred to. The Senator best informed on quarantine matters said that Congress had no right under the public welfare clause of the Constitution to enact such laws. But under that section authorizing Congress to enact laws regulating commerce, the Senate now passed these bills. The law of 1878 allows the making of quarantine regulations, which, when approved by the President, and not in conflict with existing laws for the preservation of the public health, are executive orders and have the force of law.

The old law provided no penalty for vessels bringing contagion, or for violating its provisions. The proposed law provides a fine of \$300 on a master of a vessel or other person who brings in infectious disease, or who violates the regulations framed in accordance with the act. It also provided a penalty for trespass on quarantine grounds. The proposed quarantine stations are to be located at Delaware Breakwater, Norfolk, Sapelo Sound, Key West, San Diego, San Francisco and Port Townsend. To provide for these quarantines boats, disinfecting machinery, hospital buildings, etc., an appropriation of \$480,000 had been asked. It was

estimated that the expenses of administering these stations would be \$90,000 per annum. In order to have no delay the estimate for the existing fiscal year had been included in the appropriation asked for. Heretofore the quarantine appropriation has been contingent.

With cholera in Europe, yellow fever in the West Indies, and small-pox threatening from various points, it could be assumed that the danger always existed.

At the request of the Louisiana State Board of Health I have directed one of my officers to go to New Orleans to make a thorough inspection of the quarantine at that port. In case the test should prove to be satisfactory, the machinery will be duplicated at each of the proposed quarantine stations. Of course this is dependent upon the House of Representatives passing the bill which has been enacted by the Senate.

DR. HIBBARD, of Indiana: Is the House of Representatives in favor of making the appropriation?

DR. HAMILTON: I know of no opposition, but in order to secure speedy action on the bill support is needed. In accordance with a law passed last March a Board composed of Dr. Wilkinson, the President of the Louisiana State Board of Health, two officers of the Marine Hospital Service, and an officer of the Revenue Marine Service, have selected Chandeleur Island as the most advantageous site for the Gulf quarantine.

One thing I should have mentioned as needed at the proposed quarantine stations is well equipped bacteriological laboratories. The cordial co-operation of the medical profession is earnestly desired. There is no desire to interfere with local quarantines; the latter will have to equal those of the United States, or in the event of the demonstrated efficiency of these, public sentiment will demand their substitution for local quarantines.

DR. ORME, of California: I am pleased to hear so fully from Dr. Hamilton. We all know the importance of this subject, and I would like to know what pressure is necessary to secure the desired end.

DR. LINDSLEY, of Tennessee: I move that a committee be appointed, of which Dr. Lee be the chairman, to draft a resolution for presentation to the Association, petitioning Congress to take immediate action on the law.

VACCINATION AND REVACCINATION. — M. PROUST, in a report to the Académie de Médecine, shows that the question as to the utility of vaccination and revaccination is about solved. In Germany, where vaccination is compulsory, small-pox no longer occupies a place in the statistics of the causes of death. The death-rate from small-pox in Berlin is 1.5 out of 100,000 inhabitants. In Paris the rate is 136, or 4000 a year.

THE ANTIPYRETIC, AND THE ABORTIVE TREATMENT OF TYPHOID AND REMITTENT FEVERS.

Read before the Wisconsin Medical Society, June, 1888.

BY J. R. BARNETT, M.D.,

OF NEENAH, WIS.

CHAIRMAN COMMITTEE ON PRACTICE OF MEDICINE.

(Concluded from page 447.)

Out of a total of about 100 of these cases, including more than seventy of typhoid, only two died. One of these, already reported, suffered an enormous epistaxis on the seventh day, following repeated bleedings before, and died on the ninth. The treatment of this case was mostly by quinine, on account of the hæmorrhage; which, it may be remarked, was the only alarming symptom which presented.

The other fatal one had an intestinal hæmorrhage on the third day of sickness in bed, with a coincident fall of temperature to 99°. The patient died suddenly early next morning, before I saw him. An autopsy was not permitted, and the cause of death is therefore conjectural. I was told by the family that his physician had some years before diagnosed fatty and enlarged heart. He had been a hard drinker for many years, and for this reason I had allowed stimulants throughout his short sickness.

The early occurrence of hæmorrhage is interesting, unless it be assumed that the patient was somewhat advanced in fever before he took to his bed. It is not improbable that a large concealed hæmorrhage contributed more to the sudden death than did the fatty heart.

Having now presented all the striking cases, and the worst ones, occurring in the last series of two years, without, however, going into daily clinical details which might unnecessarily prolong this paper, I shall draw upon the current literature of the subject for facts reported by other, and perhaps less partial, observers. These have accumulated during the past year to an amount that gives them decided value, even from the statistical standpoint, but more still for the broader therapeutic basis they have given the ammonium salicylate, and for the elimination of an important error of opinion to which its earliest use led.

This error, first pointed out by Dr. J. D. Sullivan, of Brooklyn, N. Y., consisted in ascribing stimulating properties to the salt, whereas its effects are undoubtedly sedative and depressing. It ought to be explained, however, that the mistake arose naturally from the manner in which the remedy was extemporaneously prepared. At that time there was no ammonium salicylate, so far as I knew. It had to be extemporized by the druggist, and sometimes the mixture would contain the salicylic acid and ammonium carbonate in the proportion of three to two, varying all the way to equal parts, according to indications for stimula-

tion presented by the case in hand. But both of these proportions represent the carbonate of ammonia in excess, and the last and commonest proportion represents an excess great enough to constitute the mixture a stimulant under most circumstances.

Besides, the use of such a mixture enabled one to dispense with alcoholic stimulants, which had hitherto been a necessity, and so the error, such as it was, was confirmed.

I was interested to observe that Dr. Sullivan, who first announced the depressing effect of the neutral ammonium salicylate, corrected this effect by adding the aromatic spirits of ammonia.

His interesting paper on the therapeutic effects of this salt, read at the annual meeting of the Fifth District Branch of the New York State Medical Association, and published in *Gaillard's Medical Journal* for July, 1887, related mainly to cases of erysipelas, septic cellulitis, puerperal septicæmia and the septic fever of tuberculosis; in which he affirmed the antiseptic and antipyretic effects of the remedy were strikingly shown; but he had had the opportunity to employ it in only one case of typhoid. This displayed all the general characteristics of the disease, with a temperature of 102° . Prescribing 8 grs. of the salicylate every four hours, after a small dose of calomel, he found "on the next day his (the patient's) temperature was reduced to 100° , his skin was moist, and he expressed himself as feeling somewhat better, and the following day his improvement was quite evident, and the ammonium salicylate was reduced to 8 grs. four times a day. He continued to improve daily, and to my surprise," the reporter adds, "I found him dressed and sitting up. His temperature was normal and he complained of nothing but weakness; he continued to improve, and within two weeks from the time of my first visit he was able to return to his business."

It is, however, mainly from his experience with this agent in septic fevers of inflammatory origin that Dr. Sullivan draws, among others, these conclusions:

"It is certainly a very effective antipyretic. In certain diseases of septic origin it exerts a curative action by tending to retard, and possibly inhibit, the development of septic elements in the system.

"It will not reduce the temperature as rapidly as antipyrin or antifebrin, but the antipyretic effect is more lasting than that produced by either of these agents."

Dr. Oscar A. Fliesburg, of Hudson, in a paper read before the Inter-state Medical Association during the meeting of last July, and published in the *Therapeutic Gazette* of the following October, records the results of his own experience with this remedy in typhoid fever and the fevers of the puerperium, as well as in most inflammations of the respiratory tract, with a positiveness of conclusion

not to be mistaken. Extemporizing the salt with a large excess of ammonium carbonate—two of the latter to one of the acid—he gave it in doses reaching 15 grs. or more, to be repeated as needed every hour or two. He says: "I have with these doses been able to reduce temperature in a short time from 105° or 106° to 99° or 100° , and by repeated doses at longer intervals been able to keep the temperature down at that point. At the same time my cases have progressed without much other medication to a favorable end in a shorter time, and with less distress to the patient, than by the older methods." In general terms he says: "The fact stands undisputed and proven that we, in salicylate of ammonium, possess a sure remedy to reduce temperature, and by its germicidal and antiseptic properties able to abort and shorten the zymotic diseases."

In a paper entitled "Salicylate of Ammonium for Fevers," which appeared in *THE JOURNAL* of February 11, 1888, Dr. D. M. Wick, of New Hartford, Iowa, gives the clinical histories of several cases of remittent fever, from which I will make brief extracts.

A boy of 6, with a temperature of 102° to 103° , was put upon calomel, to arouse the secretions, quinine, as an antiperiodic, and sweet spirits of nitre as a febrifuge, with the effect that a bright scarlatinal rash, with œdema of hands and feet, and intense itching, were produced, without any favorable effect upon the fever, which increased to 103° and 104° on the fourth day of treatment. This was now changed to ammonium salicylate, 2 grains every two hours, unaided by any other remedy. Dr. Wick adds: "I saw the patient again in eight hours, and found him with temperature reduced to 99.5° , resting quietly and sweating profusely. Next day the temperature was normal, the boy feeling so well that he wanted to be up and dressed. He made a rapid recovery."

Another boy, æt. 5 years, had been sick with remittent fever nearly a week when first seen. He was given the orthodox treatment for a week more, the temperature never falling below 102° , skin hot and dry all the time. Dr. Wick continues: "I again dropped all other drugs and gave salicylate of ammonium, gr. ij every two hours. In about eight hours his temperature fell to 99° , and he was bathed in perspiration. Continued the dose once in four hours. Saw the case next day and found no fever; tongue clean, skin moist, and the boy in every respect improved. He had no relapse, and was soon able to be around."

A girl 11 years old had had a run of measles, but fever continued high (102° to 104°), diarrhœa supervened, sordes appeared, and semi-delirium, with a temperature of 105° . When these had continued five days, the case assuming a very serious aspect, the salicylate was substituted for all other remedies, in the dose of 2 grs. every hour.

Says Dr. Wick: "The nurse told me the next morning that after giving the fourth dose the patient began to sweat, and by the time the fifth was to be given her clothing was so thoroughly saturated that the time was lengthened to four hours. Her temperature was normal. From this time she gained rapidly without one unfavorable symptom, and in one week was up." Concluding his report the doctor says:

"What is there in salicylate of ammonium that arrests high fevers so abruptly? Had the quinine, in the two remittent fever cases, neutralized all malarial poison, and, when the salicylate was given, ushered in the sweating stage? Or was it the germicidal, antiseptic and antipyretic powers of the salicylate that acted so happily? There is a *something* in its make-up that subdues arterial tension and chemically destroys the microorganisms in the blood."

In THE JOURNAL of March 3, 1888, appears a communication from Dr. D. L. Sauerhering, of Wausau, describing an endemic of typhoid, somewhat atypical in clinical history, which occurred in that city last season, and adding some comparative notes of treatment. In these he says: "Quinine, natr. salicyl. and antipyrin did not act satisfactorily in my hands, for, if given in doses large enough to depress the temperature, it would remain so only for a short time, returning to its original height in the course of ten or twelve hours, notwithstanding the constant administration of the antipyretic."

"The remedy *par excellence* proved to be the ammonium salicylate. It invariably reduced the temperature to 99°-100°, keeping it there during the entire course of the disease, diminishing the rate and force of the pulse and causing, in the majority of cases, profuse diaphoresis. When given early, within the first few days of manifestation of disease, it would generally break up an attack, the patient being able to be up and about the house in two or three days." In cases not seen until the beginning of the second week such drugs as were indicated were added to the treatment, *e. g.*, digitalis, potassium bromide, turpentine and opium.

He relates a case to illustrate the prompt action of the drug:

German, 21, laborer, seen on the ninth day of fever, at 7 P.M. Face flushed, skin hot and dry, pulse hard and full, 120; temperature 105.2°. There was considerable tenderness along the course of the colon. He was placed upon a mixture containing ammon. salicyl., gr. viij; tr. aconiti, gtt. j; potass. brom., gr. vj; ext. ergot, fl. gtt. iij, to be given every two hours. Next day at 10 A.M. his temperature was 97.8°, pulse soft and full, 96, he was perspiring freely and was free from headache. His medicine was reduced one-half and, as there was constipation and dryness of the tongue, castor-oil and turpentine were

prescribed. Two days after this Dr. Sauerhering found his patient out of bed, and one week afterward able to do the chores about the barn. "His temperature never rose to above normal after the first decline."

Continuing, the doctor says: "I am unable to give an explanation of the action of this drug, but can say from experience gathered at the bedside that it has proved itself to be a very efficient remedy in the treatment of this disease—shall we call it typhoid? Some undoubted cases of typhoid occurred during the time."

Some general remarks as to the manner of administering the ammonium salicylate, and as to immediate effects, should be offered in conclusion.

In general terms, the dose of the salt is very near in size to the antipyretic dose of the acid, although not so large, for while the former is by far the more active germicide, it is also the better antithermic. The extemporaneous preparation of the salt from the acid and ammonium carbonate shows, after perfect evaporation, that it weighs but a trifle more than the acid employed; that is to say, enough water and carbonic acid disappear in the reaction to nearly equal in weight the ammonium carbonate. The preparation of it is one of the simplest tasks of pharmacy, for it is not necessary that exact equivalents should be prescribed, as a slight excess of the carbonate is almost always an advantage. Two parts of the latter to three of the acid represent such a slight excess, and the following formula is a convenient routine prescription:

Acid salicyl.	3iij.
Ammon. carb.	3ij.
Aq. menth. pip.	3iv.

A teaspoonful of this given every two hours until its effects upon temperature are secured will usually be enough, although this quantity may, in many cases, be doubled. Symptoms of marked asthenia occurring early or late would make an increase in the ammonium carbonate necessary, but it is very seldom that it should exceed the acid in weight. On the other hand, in certain irritable states of the stomach any alkaline excess is objectionable, and a solution virtually neutral would be preferable. Such a solution would be obtained by taking out of the above formula 20 grains of the carbonate.

But it is to be said in favor of this salicylate that it is better borne by the stomach than any other with which I am familiar, and for this reason is often substituted to advantage for the sodium salt in the treatment of rheumatism, and the few inflammations in which the latter is commonly preferred.

Now and then, where constipation is present, it seems to act as a laxative, although it seldom or never increases the symptomatic diarrhoea of the fever. On the contrary, it has often seemed to lessen the frequency of the intestinal discharges,

while unmistakably modifying their character for the better. Indeed, this effect would alone justify the use of the remedy in the majority of cases of typhoid, were there no more cogent indications for it to fulfil. Dr. Sullivan has well pointed out the analogy of such treatment to the antiseptic treatment of infantile diarrhoeas by sodium salicylate, naphthalin, etc., as recommended by Hutchins, and others. It is not pertinent to the question, but I may add that Dr. Sullivan has substituted the ammonium for the sodium salt in these infantile cases, for the reason that "it is much less irritating and depressing."

The supposed laxative effect in fever cases characterized by constipation, is susceptible of another explanation—the natural evolution of the disease. But this symptom, whether artificial or natural, is always short-lived if it occur after the patient has been under care three or four days, that is to say, when there has been the opportunity to avert the severer abdominal lesions. When these have occurred,—when there has been considerable infiltration of the intestinal glands, or any degree of softening or ulceration, the time has gone for anything more than the palliation of this symptom in common with the associated symptoms of the fever. Stated in words this appears a trifle. At the bedside it is by no means a trifle. Let it be remembered that it is one of the maxims of the expectant treatment of typhoid that the diarrhoea is an eliminative process not to be interfered with. But intestinal disinfection and antiseptics, to the degree secured by the salicylate, not to mention its anterior effect upon the system at large, change the conditions of the case, and render what were otherwise a conservative evil, a needless evil. Now, with the help of a minute dose of opium given regularly, or a larger one given occasionally, the diarrhoea can be partially checked, and the business of elimination left to the renal and cutaneous emunctories.

Excretion by both of these channels is undoubtedly greatly stimulated by the salicylate. One of its earliest and most persisting effects, noted by all observers, is the free and often annoying diaphoresis, which accompanies, or even precedes the decline in temperature, and continues when the salt is given to maintain a normal temperature once reached.

The effect upon the kidneys is not so striking but is just as unmistakable. The quantity of urine is augmented, and it soon grows lighter in color and less offensive in smell. That this does not indicate a lessened excretion of solids has not been determined chemically, but it can be easily and surely inferred from the mental state of the patient. Delirium and coma-vigil are lessened to a marked degree, and in many cases averted altogether. Subsultus and carphologia, which often used to occur too early to be mere symptoms of adynamia, are now seldom observed, or only for a

few days. All this goes to show that an avowedly germicide and antiseptic treatment may do more to promote excretion, even while lessening the need for it, than the professed eliminants.

Headache is often relieved to a degree out of proportion to the temperature ebb. That this comes in part from an analgesic property of the salt has been proven in the different headaches of apyrexia.

Sleep is promoted; less, probably, from any hypnotic effect than from its modifying effect upon the general conditions pertaining to the fever. But in a word it may be said that the comfort of the patient is in every way promoted; every way save one. The one discomfort of its own that the salicylate brings is the ringing in the ears, which is so unpleasant to many that it is to be hoped that some remedy for it will be speedily found.

The cases observed during these four years have been singularly exempt from complications. The only case of intestinal hæmorrhage was the one reported. I do not recall a case complicated by pneumonitis or femoral phlebitis and thrombosis, nor, it is hardly necessary to add, of peritonitis from intestinal perforation. I do not speak of the absence of any one of these complications as singular; it is the exemption from all. Regarding the commonest one, pneumonia, we may say this, that whether we adopt the view of Klebs, that it is caused by the direct access of the bacillus typhus through the respiratory tract, or the more probable one that it is a septic inflammation from the hæmic contamination incident to the fever, that any germicide and antiseptic inhibitory of these agencies will as easily arrest the pneumonia as it will abate the fever. So if glandular infiltration is interrupted, and ulceration is prevented, there will be no intestinal hæmorrhage, no perforation, no peritonitis.

What of auxiliary treatment? Such treatment is very rarely required. In not more than one case in twenty has the question whether it were not well to give stimulants ever occurred to me. There is a general appearance of well-being and well-doing to the patient that is sufficiently reassuring to the physician without the need of extra precautions. Almost equally seldom will the question of giving quinine arise. A tonic seems as unnecessary as an alcoholic stimulant, while as an antipyretic quinine might certainly be left out of the question.

It would seem that laxatives, and especially cathartics, might be almost wholly dispensed with, unless it should appear that prolonged constipation had preceded the onset of the fever. Even then the laxative could be selected without any reference to antiseptic effects, so that the choice need not of necessity fall upon calomel. Its antiseptic effect would not add appreciably to that already attained by the salicylate.

Opium will find a useful place oftener than any other adjuvant; but as already intimated, it will be needed less than under former modes of treatment, while on the other hand, a safeguard is guaranteed for a much freer use, since the constant maintenance of free elimination is not now of such vital consequence.

To raise the question of the mode by which ammonium salicylate interrupts the course of typhoid and remittent fevers would, at the present time, be but to open up a field of boundless conjecture. This will have to be determined by future investigations, and by those qualified by experience in such researches. Still, I cannot forego expressing the belief that when this and similar questions are cleared up the conclusion will be in harmony with the views advanced by Professor Semmola before the Ninth International Medical Congress. "The true part played by bacteria in pathology" he says, "is the production by them of certain noxious and decomposed elements of the blood, which substances, and not the bacteria, are the potent factors in the causation of disease."

Not forgetting the cause of this cause, it is still probable that all the striking phenomena of these fevers proceed directly from this condition of the blood, this *ptomainemia*, if we may use such a word, and it is at least presumable that the phenomena may be interrupted or averted by chemically changing those ptomaines, or undetermined noxious substances, so as to render them innocuous, and that without necessarily destroying the vitality of the bacteria causing them. The very unstable nature of these substances already known would invite such a mode of attack, and would justify the use of the feebler germicides, capable, nevertheless, of decomposing these substances.

While believing that the ammonium salicylate reaches the first cause of these fevers by a destructive or inhibitory action upon their specific germs. I believe also that this is likely to prove the lesser of its two leading effects, being led to this view by the clinical fact, reported two years ago, of the recrudescence of the fever when the salicylate is prematurely dropped out of the treatment, as at any time before the end of the first week. This, occurring after a day or more of normal temperature, would argue a re-intoxication by the products of the vital activity of bacteria still living; which is equivalent to saying that the bacilli may be present without fever so long as their immediate effects are neutralized, just as they may be present without fever when their vitality is seriously compromised.

Do the foregoing facts justify the conclusion that ammonium salicylate is a specific remedy for typhoid and remittent fevers? I think they do. The advocates of the iodine treatment of typhoid advance the unchallenged claim that it is a specific, while Liebermeister has shown that it is attended by a mortality of more than 14 per cent.

Ziemssen admits the same claim for calomel, while denying that it is able to shorten the disease; but the mortality following this treatment is nearly 12 per cent. The mortality for the cold-water treatment, as reported by Brand, of Stettin, out of a total of more than 8,000 collected cases is 7.4 per cent. Under all modes of treatment, as determined by Jaccoud from more than 80,000 cases, the fatality is, 19.25 per cent. Up to the present the mortality percentage for the ammonium salicylate treatment is somewhat less than 3.

It will undoubtedly be objected that cases ending in resolution during the first week, or before pathognomonic symptoms of the fever have time to develop, cannot be fairly classified as typhoid. This is a rational objection, but it holds equally against all statistics of specific treatment; for no medication with a view to aborting the disease many days later than this period will be availing. If then we are to await the occurrence of the distinctive anatomical lesions before being permitted to announce a diagnosis, it is clear that no remedy, now or hereafter, can successfully claim to be abortive or specific. It ought to be a basis for a diagnosis having all the elements of probable correctness, that a given case has occurred during the prevalence of typhoid, especially in the same family; that the usual prodromata have been present, and that high fever, characterized by the usual thermometric curve has existed for two or three days.

While it is possible that my diagnosis has not always been subject to these limitations, it is certain that the exceptions have been very few.

It must be admitted that the number of cases has been too small to have great statistical value, but they cover a period of four years, and so represent the average severity of the disease, whereas the same number occurring in the course of an epidemic might represent only a benign form of the malady, where the fatality would be light under any treatment, or without any.

If the consideration of the treatment of these two fevers in a single paper needs an explanation or apology it is this:

Save in unimportant particulars the treatment is identical. Both are arrested by the ammonium salicylate; such arrest being limited to the pre-inflammatory stage of typhoid, while it is doubtless practicable in any stage of remittent fever. This is so probable that it may serve in the differential diagnosis of cases hard to make out—cases which occur with sufficient frequency to the most careful and observing clinician. It may be fairly assumed that in a case of supposed typhoid, seen first after the occurrence of striking abdominal symptoms, and shortly aborted, a revision of diagnosis is warranted if not demanded. At the same time it is *practically* unimportant to make the distinction, since the revision, when made, involves no corresponding change of treatment.

RENAL TENESMUS:

A RESULT OF CHRONIC CYSTITIS AND URETERITIS; SUCCESSFUL TREATMENT BY KOLPO-URETERO-CYSTOTOMY AND INTRAVAGINAL DRAINAGE COMBINED WITH ELEVATION AND SUPPORT OF THE UTERUS AND OVARIES.

Read in the Section on Gynecology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY NATHAN BOSEMAN, M.D.,

SRGEON TO THE WOMAN'S HOSPITAL, NEW YORK.

(Concluded from p. 443.)

Ureteritis and Pyelitis.—I have referred particularly in the preceding remarks to the teachings of my first operation of kolpo-cystotomy, in 1861, and to those of the recent case cited, because they have a direct bearing upon ureteritis and pyelitis, belonging to the third and fourth classes of our division. They show the tenor of the line of work that I have pursued during all the succeeding years of my experience, which has finally led me to diagnosticate, differentiate, and treat successfully the two last named diseases. This has been done by a careful study of certain groups of symptoms and physical signs characterizing these and other lesions sketched in the first part of this paper. I will again briefly point out the more important differences between ureteritis and pyelitis. Ureteritis indicates its presence by congestion and thickening of the mucous lining of the vesical portion of the ureter, and by diminution of its lumen, coupled at times with intense morbid sensibility. Pyelitis evinces a thickening or hypertrophy of the walls of the ureter in some part or the whole of its extent, with partial or complete dilatation, coupled with no greater sensibility usually than accompanies the lodgement of a similar sized instrument in the male urethra for the relief of a stricture.

I am sorry that time does not permit me to report all of my cases of these two classes, in order to illustrate and substantiate more fully what I have said. Each presents certain points of interest, but at the same time there is a uniformity in the principal features of all. The case of Mrs. B., already related in the journal cited, I regard as typical of my fourth class, where dilatation of the ureter had occurred and the inflammation had extended to the pelvis of the kidney.

Kolpo-Uretero-Cystotomy.—By kolpo-ureterocystotomy, described in my paper on the treatment of chronic pyelitis, and now advocated and recommended for the successful treatment of renal tenesmus, I mean the making of an opening through the vesico-vaginal septum not smaller than a silver half-dollar, and having specific and close relation to the outlet of the affected ureter and kidney. When of this size and in this situation, it insures a free and direct escape of the secretions from both organs into my intra-vaginal drain, from which a state of the most complete physiological rest is obtained, with the best pos-

sible aseptic surroundings of the newly-made wound. In this way the greatest comfort is conferred upon the patient in any position she may choose to take for sleeping, sitting or walking.

While it may seem to some, with no experience in such matters, that my recommendations for the establishment of the large openings in the two procedures outlined shows a needless sacrifice of tissue, with which I have, indeed, been charged by writers with regard to the first, yet, nevertheless, I am prepared to maintain the correctness of the practice on the basis of the good results I have obtained by them, and from having seen very defective vesical drainage and the evil consequences therefrom, when even larger fistulous openings existed than I have advocated, resulting from parturition. It is well to bear in mind that I operate either in the supported knee-elbow or left lateral position, using my bilateral dilating speculum, which spreads out the septum, very elastic in character, and the opening when made in it in this state of tension naturally seems large. From these circumstances it may be readily inferred that the loss of tissue is always more apparent than real.

Renal Tenesmus.—This brings us now to the study of renal tenesmus as a result of chronic inflammation of the mucous membrane of the vesical portion of the ureters, the main object of this paper. By renal tenesmus I mean violent and painful contractions of one or the other ureter and corresponding pelvis of the kidney, with marked tenderness or soreness under pressure of the latter organ, proceeding from morbid irritability of both structures. The pains occur in paroxysms, which vary in frequency, duration, and severity in different cases according to the stage of the preceding ureteritis and the extension of the lesion to one or both sides. As a rule, it is confined at first to the groin on one side of the body, and afterward to the corresponding lumbar region. In the more severe attacks the pain, besides being violent in these situations, radiates to the hip, the outer and inner sides of the thigh, the knee, leg, and even to the toes. Cramps of the muscles of the lower extremity on the affected side also occur in these severe paroxysms. In the well-marked cases, attacks of this sort come on daily, or even several times a day. They are most frequent and severe during the menstrual periods. The patients describe them as occurring most often during the night. They awake with a pressing desire to urinate; the emptying of the bladder is accompanied by more or less pain and spasm, and its evacuation is followed by a cramp-like pain ascending along the course of the ureter to the kidney, and radiating to the lower extremity. The patients sleep, as a rule, on the affected side, with the face turned toward the pillow, and it is the habit of many to draw the opposite thigh up over its fellow against the abdomen. The

pain is excited in the early stages by the marital relation, which in nearly all cases becomes intolerable in the advanced stages of the disease.

Other symptoms are associated with the renal pain and the disturbance of the functions of the bladder. Anorexia, nausea, and vomiting are almost always present, especially during the menstrual periods, and as the attacks of vomiting are generally long continued, the vomited matters become stained with bile. Jaundice is not even an uncommon result. Hysterical symptoms form a marked feature of most of the cases. The patients start at the slightest noise, become despondent, cry, and laugh without sufficient cause, and sometimes have well-marked hysterical convulsions followed by a period of unconsciousness. Finally, in the advanced stages of the disease, after years of almost ceaseless pain, when dyspepsia, loss of appetite, nausea and vomiting, torpidity of the liver, constipation of the bowels, and yellowish tinge of the complexion shall have supervened, the general aspect of the subject is that of inanition or starvation, from which, with continually increasing physical and mental sufferings, death puts an end to the roll.

That the pains which I have described as constituting renal tenesmus are referable to ureteritis, beginning in the lower part of the ureter as an extension of cystitis, and are due to spasm of the affected ureter and pelvis of the kidney, appears not only from their situation and character, but also from the following physiological signs and observations.

Tenderness over the kidney on the affected side is usually present. Frequently I find a small area of great sensibility midway between the crest of the ilium and the last rib. There may also be tenderness on pressure in the groin. More important and characteristic than either of these signs is great tenderness at the ureteral orifice, and along that portion of the ureter which lies in the vesico vaginal septum. The slightest pressure upon this part of the anterior vaginal wall on the affected side causes pain, which frequently ascends along the ureter to the groin and kidney. This, together with the sensitiveness of the urethra and the bladder, furnishes an explanation of the dyspareunia which is so commonly present in these cases. Pressure with even a few pledgets of dry cotton also gives rise to pain in the ureter. Looking back over my experience, I recognize these patients as those who were unable to tolerate columning the vagina with dry cotton for displacements of the uterus and ovaries—a practice which I have pursued nearly twenty years.

Paroxysms of renal tenesmus may also be excited in a most striking manner by moderately distending the bladder with warm water. The pressure of the water, when sometimes only a few ounces are used, causes an irresistible desire to urinate, which, if not promptly relieved, is

followed by the pain along the ureter and in the kidney, even in the corresponding hip and lower extremity down to the end of the toes. The patients recognize the pain produced in this way as the symptoms which have been their chief source of suffering. The attacks of renal tenesmus brought on by either of these procedures may last for several hours or days, and are frequently accompanied by great mental excitement and hysterical manifestations. Hence the necessity of caution in adapting these means to the peculiarities of the case.

Corresponding to these clinical facts after a kolpo-uretero-cystotomy is done, we find great sensitiveness and irritability of the bladder and ureter. In the report of my first two cases of pyelitis, I stated that catheterization of the ureter caused but little pain. This is true in a normal ureter, and in some cases of pyelitis with considerable dilatation of the duct; but when pronounced ureteritis exists at or near the vesical orifice of the tube and renal tenesmus is present, the passage of the smallest instrument gives rise to violent paroxysms of pain. In the normal pelvis distention with fluid occasions moderate pain, identical in character with that we are considering, and the quantity of fluid thus injected becomes a measure of its capacity. When renal tenesmus is present, however, the pelvis of the kidney is intolerant of fluid, and the pain beginning before distention is reached may continue for hours. In these cases, therefore, the quantity of water that can be injected is rather a measure of the irritability of the pelvis than of its capacity.

This view of the causation and pathology of renal tenesmus is further strengthened by the results of treatment. As soon as the proper opening is made at the affected orifice of the tube, and the bladder and upper urinary passages are put at rest, coupled with suitable drainage and support of the uterus, the paroxysms become less frequent and soon disappear altogether.

Differentiation from Renal Colic.—The pain of renal colic also depends upon violent contractions of the muscular fibres of the ureter and pelvis of the kidney, and when renal tenesmus is severe there is a close similarity between its paroxysms and those of renal colic. The situation and character of the pains are identical in both, and associated with either there may be a frequent desire to urinate, cramps in the lower extremities, and nausea and vomiting. Both are due to spasm of the muscular fibres of the ureter and pelvis of the kidney; the distinction between them lies in the cause of the contractions. The contractions in renal colic arise from the impaction of a foreign body, usually a calculus in the ureter, causing the urine to collect in and distend the pelvis of the kidney above the seat of obstruction; the contractions which follow are a response to this powerful source of irritation, and the con-

dition of the mucous membrane, whether healthy or diseased, has little to do with their occurrence. In renal tenesmus, however, the irritable condition of the lining membrane, the result of ureteritis, leads to violent contractions of the muscular fibres of the ureter and pelvis from much slighter causes, as, for example, increased tension of the urine during forcible expulsive efforts of the bladder, or, as happens in the bladder, the presence of the urine itself, especially if abnormal, may excite spasmodic contractions. Dependent upon the difference in causation of renal tenesmus and renal colic, each possesses certain distinctive features. An attack of renal colic continues, as a rule, with only short intermissions, until the calculus escapes into the bladder, and the concretion is afterward generally discovered in the urine; the paroxysms also recur at irregular and usually long intervals. The pain of renal tenesmus is less severe and long continued; it comes on more frequently, and the paroxysms, as we have seen, occur several times a day, and often from the most trivial causes. The most important diagnostic feature of renal tenesmus, however, is the facility with which an attack can be excited. When any doubt of the causation of the pain exists, it may be set at rest by making pressure over the ureter where it lies in the vesico-vaginal septum, or by injecting the bladder with warm water in the manner already described. The distinction, thus easily made, is all the more important, because an error in diagnosis, as I have known to occur, may lead the surgeon to perform lumbar nephrotomy and find no stone in the pelvis of the kidney.

Differentiation from Pains in the Ovaries and Tubes.—In the milder cases of renal tenesmus, where the pain is referred to the ureter in one or the other iliac region, and radiates less frequently to the pelvis of the kidney, the pain may be ascribed to ovarian neuralgia or disease of the ovary and Fallopian tube. This error is all the more likely to occur because at times there is no pus in the urine, and hysterical symptoms commonly referred to ovarian irritation may be highly developed; the patient may also describe the pain vaguely as being in the side, as often happens, and her sufferings may be intensified during the menstrual periods. That this error in diagnosis is not a mere theoretical possibility will be seen by the histories of two cases which I will presently report. In one of them the ovaries and tubes were removed a year ago by a distinguished laparotomist of New York; in the second case a Tait's operation was urgently recommended by another. In order to ascertain the cause of the pain the urine should be frequently examined, especially at or about the menstrual periods, the condition of the bladder should be inquired into, and the situation and character of the pain carefully noted; if then any doubt remains, pressure

over the ureter should be tried and the bladder injected with water. The excitation by these means of an attack of renal tenesmus, which the patient recognizes as being identical with the pain she has suffered so long, will at once clear up the diagnosis. May not a more careful and painstaking study of the differentiation between deep pelvic pains, regarded usually as significant of diseases of the ovaries and tubes on the one hand, and the group of symptoms characterizing renal tenesmus on the other, serve to explain the too frequent resort to oöphorectomy as is now believed to be the case by the majority of the profession?

Treatment.—In order to present a clinical picture of our third class of cases, where the inflammation is confined to the bladder and ureter, and is associated with renal tenesmus, I will relate to you the histories of the following cases, together with their treatment:

Case 1.—Mrs. G., æt. 26, a laundress, was admitted into my service in the Woman's Hospital, November 30, 1887. Her symptoms began during her second pregnancy, seven years ago, with pain in the left groin which afterward extended to the corresponding lumbar region. Micturition also became frequent, and she noticed a strong odor and thick deposit in her urine. In 1885, she was under my care for seven weeks. At that time there existed a marked retroversion of the uterus and her urine contained pus. She was treated for the displacement by columning the vagina in the supported knee-elbow position, with ordinary dry cotton; but was unable to tolerate the required pressure, and left the hospital without having received any benefit. She was also under treatment for nearly two years in the out-door department of the hospital, but did not improve. In the spring of 1887, both of her ovaries and tubes were removed by a laparotomist of New York City. She entirely recovered from the operation, and during the past year has only menstruated twice. Her sufferings were not relieved, but rather increased, by this operation, especially those relating to the bladder and head.

When she was admitted into the hospital in November last, she had then been suffering from great vesical irritability for seven years. For five years she had been obliged to get up to empty her bladder many times during the night, and during the exacerbations of her symptoms, which occurred at the menstrual periods, she was unable to hold her urine longer than half an hour. The evacuation of the bladder was usually affected by violent and painful contractions or cramps. After the small amount of urine which she could retain was expelled, pain would ascend from the bladder into the left groin and continue for a few minutes or half an hour. At first the pain was confined to the left iliac region, running upward from the inguinal ring along a line to the lumbar region.

At a later period, when her symptoms had increased in severity, it extended to the groin and lumbar region on the opposite side, and finally to the corresponding hip and down the thigh to the knee. Violent and long continued cramps of the muscles of the lower extremities frequently occurred during the paroxysms of pain. The position in bed which she found the most comfortable was on the right side. (In this respect the case is exceptional; most of the patients lie on the affected side.) Her appetite was poor, and during the menstrual period she suffered most from nausea and vomiting.

On palpation, a point was found in the left lumbar region where moderate pressure caused her to cry out with pain. Vaginal examination disclosed great tenderness at the vesical extremity of the ureter. The uterus was now retroflexed instead of retroverted as previously existed, inclined to the left side of the pelvis, and immovable. A mass of exudation could be felt in the posterior cul-de-sac, all legitimate results of the operation she had previously undergone for removal of the ovaries and tubes. The urine contained a small amount of pus; otherwise, was normal.

On December 9, I made an opening in the bladder immediately in front of the orifice of the left ureter. The night after the operation the patient slept soundly, the first time, she declared, in two years. About ten days after the operation the ureter was searched for and found with some difficulty on account of the great tenderness of the bladder at this part. Catheterization and irrigation of the ureter and pelvis of the kidney were painful. The injection of only a drachm of water through the catheter caused violent paroxysms of pain, radiating down the corresponding hip, thigh and leg. Owing to the extreme pain arising from the passage of the catheter, and my failure to find any pus in the pelvis of the kidney, I gave up the practice after a few trials, not deeming it justifiable under the circumstances.

While the patient remained in the hospital her symptoms steadily improved, the paroxysms of renal pain becoming less and less frequent. Owing to the fixation of the uterus, the use of the drainage instrument was less satisfactory in this case than in any I have treated. My utero-vesical drainage support collected the urine fairly well, but, owing to the pain which it occasioned by pressing up the uterus, it could not be worn. A special instrument, made short so as to occupy the vagina in front of the uterus, was tried. This did not cause pain, but collected only a part of the urine. After the patient, however, got accustomed to the presence of the instrument and learned how to manage it better, very good drainage was secured.

The patient left the hospital after having been under treatment about four weeks. I saw her a

few days ago. She was relieved of all her symptoms. She says she is able to do the hard work of a laundress all day, and sleeps soundly at night. When asked if she would prefer to go all her life with incontinence of urine rather than return to her former condition, she answered, "a thousand times."

In the above case the vesical and renal symptoms were well marked, but the hysterical phenomena which, as a rule, form a prominent feature of these cases, was absent. In the following case they were well developed.

Case 2.—Mrs. M., aged 26, was married at 16, and has given birth to three children. Soon after marriage she began to suffer from pain in the urethra, and a frequent desire to urinate following sexual intercourse, and at this time she first noticed a thick deposit in her urine. During her first pregnancy, nine years ago, these symptoms became worse, and in the later months she began to have pain in the right groin radiating to the region of the kidney. These symptoms continued and were aggravated during her subsequent pregnancies. During the early months of her second pregnancy her urine contained blood. For a long time she complained of pain in the head, and suffered from nausea and vomiting during her menstrual periods, at which time all her symptoms were aggravated. In consequence of her sufferings she became nervous and hysterical. Frequently, at the end of a paroxysm of pain in the ureter and kidney, she would have convulsive movements ending in unconsciousness, which continued for half an hour or more. For the relief of the pain she became habituated to the use of morphine and chloral, and took large doses of these drugs. About two years ago an abscess formed in the right iliac region. It opened into the rectum, and the discharge continued for about three months, when it ceased. She recovered from all the symptoms referable to the abscess except a dull, aching pain in the pelvis.

The patient was brought to me from Texas by her family physician, for the purpose of having her ovaries removed. His opinion as to the advisability of the operation had also been strengthened by that of a laparotomist of New York, who diagnosed a pyosalpinx. I first saw her on March 15th.

On palpation a point of tenderness was discovered in the lumbar region over the kidney. Examination of the pelvis in the supported knee-elbow position disclosed the following: The urethra was much thickened, feeling like a hard rounded cord beneath the finger, and the vesico-vaginal septum also seemed indurated and resisting. The uterus was prolapsed and inclined toward the right side. A corresponding displacement of the right ovary existed; it was drawn to the right and imprisoned beneath the uterus. Pressure with the finger on the anterior wall of

the vagina, over the line corresponding to the course of the right ureter, caused severe pain which radiated along the ureter to the kidney and downward to the hip, thigh, knee, leg, and even to the toes. Pressure over the left ureter occasioned little inconvenience. On examining the urine, it was found to contain a moderate quantity of pus.

A few days after the first examination, in order to support the uterus and ovaries and to gradually free them from their confined positions, I commenced columning the vagina with dry cotton in the supported knee-elbow position. I introduced a few pledgets of ordinary cotton, employing very gentle pressure, as is my custom at first in cases where the parts are sensitive. After a few trials this plan of treatment had to be abandoned. The presence of the cotton caused the same group of symptoms which were excited by pressure over the ureter with the fingers.

An attempt was next made to wash out the bladder. When I had injected about three ounces of warm water through a small, soft catheter introduced into the bladder, the patient began to complain of pain. The pain soon became very violent, extending, as usual, along the ureter to the kidney on the right side, and down the thigh to the toes. The paroxysm lasted two or three hours, ending in a hysterical attack followed by a period of unconsciousness.

Failing to benefit my patient by other means, on March 31st, I performed right kolpo-uretero-cystotomy. I was assisted by Dr. J. F. Chauveau, of New York, Dr. Joseph Letcher, of Texas, and my son, Dr. Nathan G. Bozeman, who had charge of the patient after the operation. I made an opening in the bladder about the size of a silver half-dollar, immediately in front of the orifice of the right ureter. The vesical wall was found much thickened and the cavity of the bladder contracted. A utero-vesical drainage support was introduced into the vagina; it collects the urine, and by its use the patient is kept almost perfectly dry.

Since the operation there has been a marked improvement in the patient's condition. She is now entirely free from the attacks of renal pain, is able to sleep all night, and has left off the use of opium and chloral. She can sleep on her left side, which she has not been able to do for two years. Her appetite and general condition have improved, and she is able to go out of doors and take exercise. Nausea and vomiting, which had hitherto been constantly present during menstruation were absent at her last period and the exacerbation of her symptoms usual at this time did not occur. Owing to the elevation of the uterus and ovaries by the drainage support even the symptoms referable to these organs have almost disappeared. In short, now, five weeks after the operation, the patient declares she is entirely re-

lieved and wants to return home. She has increased five pounds in weight since the operation. In this case, owing to the marked and rapid improvement in all the symptoms, I decided not to catheterize the affected ureter and kidney, believing this to be unnecessary. The drainage was almost perfect from the beginning.¹

In order to secure the best results in the treatment of diseases of the bladder and upper urinary passages by the operation of kolpo-uretero-cystotomy, the bladder must be kept free from urine. My practice, as previously stated, is to make the opening about the size of a silver half-dollar. My experience has taught me that an opening in the vesico-vaginal septum of this diameter will contract to the size of the index-finger, depending, of course, upon the degree of hypertrophy the structure has undergone.

But this is not all that is necessary to secure free open drainage and physiological rest of the bladder. The posterior wall of the vagina lies in contact with the fistula and tends to obturate the opening. In the recumbent posture, also, the orifice of the vagina is on a plane about an inch and a half higher than the most dependent part of the posterior cul-de-sac. The urine must, therefore, first partly fill the vagina and bladder before it can escape from the body. Furthermore, in unmarried women especially, where the perineum is intact, a small ostium vaginæ prevents free egress of the urine. Another cause of retention in cases of fistula was first pointed out by Jobert de Lamballe; to-wit, extreme anteversion of the uterus. Here the fundus being displaced forward, it carries the superior wall of the bladder before it, while at the same time the vesico-uterine junction is drawn backward by the cervix. In this way is produced a fold in the bladder, and if the fistula be situated high up, it is more or less completely occluded. From some of these causes, it is a matter of common observation that patients suffering from fistula are frequently able in the recumbent posture to retain almost all the urine in the bladder and vagina—as in a common cavity, so to speak. It is evident, when great irritability of the bladder is present and the urine is not entirely drained off, spasms of the organ will persist,

¹ The patient continued to improve until May 28th, fifty-eight days after the operation, when she left New York for her home in Texas, having up to this date gained sixteen pounds in weight. The following is an abstract from a letter to me after her four days' travel in the cars:

"Lampasas, Tex., June 8, 1888. . . . Was sick the first day, but after that got along very well. Did not sit up at all. Had my berth down all the way. Found my family quite well, and delighted to see me looking so well. Have felt real strong since I rested from travelling. Have not felt so well for years. Suffer very little pain anywhere. My friends all think it wonderful that I should have improved so much in so short a time. The instrument is working very well, but the drainage is not perfect, some water seeming to stay in the instrument. . . . I can walk now and sit down with perfect ease; can hardly tell I have the instrument on."

July 16. In a letter of this date from the husband of the patient, he says: "My wife is getting along nicely, and says she will be back in September," that is, for the closure of her fistula.

I have performed three more operations for renal tenesmus, now making six in all, with results equally satisfactory, if not more so, than in the two cases here reported.

the tendency to reflux of the urine into the ureters will continue, and the group of renal symptoms and complications which I have described will not be relieved. The case of Mrs. S——, referred to in a previous part of this paper, proves this point in a striking manner. Here kolpo-cystotomy, it will be remembered, had been performed for cystitis five years before, from which only imperfect vesical drainage was secured. But little benefit was derived from the operation, distress about the bladder continued and ureteral and renal complications in the left side developed two or three years afterward. As evidences of the persistence of the spasms and excessive action of the bladder, I found the walls of the latter, five years after the operation, hard, resisting, excessively sensitive under pressure, and about five-eighths of an inch in thickness, with a cavity of scarcely three ounces retaining capacity.

Another and more obvious advantage which follows the use of the drainage instrument is the relief of the discomfort and evil effects of incontinence of urine. It increases the scope of the operation, because without it I would hesitate to open the bladder in all but the graver cases of vesical and renal disease. By its use the patients are made comfortable; they complain of but little inconvenience, and wait with patience until the opening can be closed.

I have made some changes in the drainage instruments since I described them,* the most important of which adapts them for drainage when the patient lies on her side. Drainage is now secured in all positions of the body. At a future opportunity I will give an account of these improvements, and also a modification of the instrument which adapts it to treatment of incontinence of urine in young girls, arising from weakness of the neck of the bladder, together with other practical points resulting from a more thorough study of the subject.

Frequently associated with disease of the bladder and upper urinary passages there are, as we have seen, displacements of the uterus and ovaries. The uterus is generally inclined backward and to one or the other side of the pelvis. The distortion of the bladder near one of the ureteral orifices resulting from the uterine displacement, and in some cases the pressure of the fundus uteri upon the inflamed ureter, tend to keep up the cystitis and to aggravate the ureteral pain. It is therefore important that the uterus and ovaries should be restored to their normal positions. Before the bladder is opened, owing to the tenderness of the urethra and the extreme sensitiveness of the ureter on the affected side, the use of a uterine support or pessary, however soft, is impossible, and in most instances even gentle pressure with a few

pledgets of dry cotton cannot be borne. Fortunately, after the opening is made the uterus tends to be pushed forward by the pressure of the abdominal viscera, in order to fill the space formerly occupied by the bladder, and owing to the rapidly diminishing tenderness of the ureter the vagina soon becomes more tolerant of pressure.

In order, therefore, to secure the advantages of elevation and support of the uterus and ovaries in combination with drainage of the bladder, the drainage instrument is made thick and rounded at its upper extremity, where it lies in the posterior cul-de-sac beneath the cervix uteri. As a uterine support, its mode of action is similar to that of the dry cotton column applied in the manner I use it. The instrument lifts up the body of the uterus, stretches the posterior wall of the vagina, and tends to carry the cervix backward. Not resting against the symphysis pubis, as does a Hodge pessary, but conforming to the axis of the lower part of the vagina, and sustained chiefly by the perineum and vaginal walls, it exerts an elastic pressure upon the uterus. The instrument consequently yields during sudden movements of the organ, following jars of the body or expulsive efforts of the abdominal muscles. The mucous membrane of the anterior wall of the vagina is applied closely to the concave upper surface of the drainage support and sinks into the perforations made in it for the passage of the urine. This gives steadiness to the instrument and increases its efficiency as a uterine support. At first the drain sometimes causes discomfort; immediately after the operation it is necessary to use a very small instrument, and exceptionally, as in the case of Mrs. G——, the form of the drain must be modified.

I have found continuous irrigation and drainage to be of great value just after the operation, and my system of intravaginal drainage has been extended to accomplish this. For the perfection of the system in the application of suction I am indebted to my son, Dr. Nathan G. Bozeman, and Dr. William B. Gilmer, who have recently been deeply interested with me in working up the subject of drainage, and have materially contributed to my success by their experimental work. This system of continuous irrigation and drainage is of great practical importance and has a wide range of usefulness in general surgery, but the further consideration of it, together with the several improvements made in my drainage supports will be the basis of a future paper.

In my paper on pyelitis, so frequently alluded to, I explained sufficiently the method of irrigating the kidney. In cases where cystitis and ureteritis associated with renal tenesmus are present, the indications for the employment of this procedure are not so clear as when the inflammation has extended to the pelvis of the kidney. My experience so far tends to show that physiological rest

*American Journal of the Medical Sciences, March and April, 1888, and Transactions of the Ninth International Medical Congress, 1887.

and drainage of the bladder and affected ureter are all that are necessary when the complication of renal tenesmus alone exists. After the extreme sensitiveness of the parts has subsided, however, the passage of the catheter may be found useful for its tonic effect, as is the case in a similar condition of the mucous membrane of the male urethra; but further experience is needed to settle this point.

Now, a few words about the time which should be allowed to elapse before closing an artificial fistula. All thickening of the vesical walls and tenderness about the urethra, bladder, and ureter must have disappeared. From six to twelve months, as a rule, are required to accomplish these results. Of late I have adopted a useful method of determining this point experimentally. I introduce a large cylinder of hard rubber—one of my intra-vaginal dilators—which obturates the fistulous opening and keeps the urine in the bladder. If the patient can wear this instrument for a week or two without the occurrence of any distress in the bladder, the opening may be closed at once and the bladder allowed to take on its normal functions.

9 West Thirty-first Street.

MEDICAL PROGRESS.

ANCHORING OF THE BRAIN AND SOME OF ITS CONSEQUENCES.—In regard to this DR. WM. MAC- EWEN, in his Address at the recent annual meeting of the British Medical Association, said: When injury has been inflicted on the surface of the cerebrum, followed by plastic effusion and cicatricial formation, the superficial substance is apt to become soldered to the membranes when these remain intact, which in turn may be soldered to the skull, or in the event of their detachment, the brain may become directly adherent to the bone by means of cicatricial adhesion. Thus the surface of the brain becomes anchored or soldered to its rigid walls. It has no longer the free play within its water bed to expand and contract according to the varying states of the circulation. Each variation produces a dragging of the brain at this spot, and through it the whole hemisphere at least is affected. Any sudden physical effort pulls on the brain, producing a slight shock, a momentary disturbance, just as if the cerebrum had received a blow. Vertigo results. People affected in this way cannot rise up quickly, or perform any sudden motion of the body or head, without experiencing a sensation of giddiness, which sometimes causes them to drop. Consequently, they are often incapacitated from pursuing their usual avocations.

Following upon this, the gray matter of the cortex, immediately surrounding the cicatrix, by

the incessant movement is apt to become unstable and to produce fits. Some cases of traumatic epilepsy are thus caused. Further, if the cortical irritation be continued, encephalitis is occasionally produced, often appearing in a chronic form and long remaining so, though susceptible of being lit up into an acute affection. If the temperature remains high, active interference is apt to induce an extension of the encephalitis. Operation in such cases should be, when possible, postponed. The disregard of this advice has, to my knowledge in one instance, hastened the fatal issue, encephalitis becoming rapidly general. — *British Medical Journal*, August 11, 1888.

INFLUENCE OF PILOCARPINE UPON THE MU- COUS MEMBRANE OF THE TYMPANUM.—At the conclusion of an article on this subject DR. W. KO- SEGARTEN, of Kiel, says: It seems evident to me that injections of pilocarpine also have a decided influence upon the mucous membrane of the middle ear, and therefore in chronic processes of the middle ear, accompanied by affections of the labyrinth, this remedy acts not only upon the internal ear, but that it can also exert a favorable influence upon the middle ear process. By means of returning hyperæmia, which may even cause exudation, there ensues pliability of the sclerosed tissues, and moistening and softening of adhesions, and in this way the unyielding conducting apparatus again becomes more capable of vibrating; where exuda- tions had become deposited, their absorption was brought about, as could be observed in the mem- brana tympani of a patient. The reason Politzer found the remedy inefficient in these affections was because he discontinued treatment too soon, for in these chronic processes we cannot accom- plish anything except by long-continued action. — *Archives of Otology*, June, 1888.

CHLOROFORM WATER AS A VEHICLE.—UNNA, in *Monatshefte für Praktische Dermatologic*, says that he has found chloroform water an excellent vehicle for the hypodermatic administration of Fowler's solution and ergotin, as it prevents the decomposition of the solution. It is also useful in giving morphia where a local anæsthetic and counter-irritant effect is desired, as in neuralgias. It is equally valuable in the internal administra- tion of drugs which decompose rapidly. Atro- pine and bichloride of mercury may also be given in chloroform water. — *Med. News*, June 23, 1888.

ABDOMINAL PAIN.—DR. LAUDER BRUNTON (*Brit. Med. Journ.*, June 2) recommends codeine in half grain doses three times a day, increased to a grain if the patient is not relieved. It does not cause drowsiness nor does it interfere with the diges- tion. In long-continued enteralgia, not due to organic disease, it has continued to relieve pain for months together.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....	\$5.00
SINGLE COPIES.....	10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, OCTOBER 6, 1888.

CONGRESS OF AMERICAN PHYSICIANS AND
SURGEONS.

Our reporter has furnished us with a full report of the doings of the general sessions of this new organization, and of the American Surgical Association, at the recent meeting in Washington. The first general session of the Congress was held at 1 P.M. of Tuesday, September 18, 1888, and was occupied solely with the report of the Executive Committee on plan and purposes of the organization and the By-laws, all of which will be found under the head of Proceedings of Medical Societies in the present number of THE JOURNAL.

The second general session was held in the evening of the same day and was occupied chiefly with the subject of "intestinal obstructions." But the papers of Drs. H. H. Smith, T. G. Morton, C. B. Penrose, N. Senn, R. Harvey Reed, and some others, with the discussions thereon, in the Surgical Section of the American Medical Association, last May, and since published in full in THE JOURNAL, so fully cover the field of intestinal surgery that we do not find such additional facts or views in our report of this session of the Congress as would justify our using it. The third general session was occupied with the subject of "cerebral localization and its relations to cerebral surgery," a report of which will be found in the present number of THE JOURNAL. The fourth and last general session was held on Thursday

evening, Sept. 21, when the President, J. S. Billings, M.D., U. S. A., delivered his Address on "Medical Museums," the most important portions of which were published in THE JOURNAL for Sept. 22, ult. Aside from these joint or general meetings in the evening, each of the several associations of specialists held their meetings separately and attended to all their work independently, as in former years.

SEE ON THE TREATMENT OF ANEURISM.

At one of the recent meetings of the Académie de Médecine Dr. Dujardin-Beaumetz read a note on the treatment of aneurism, by PROFESSOR GERMAIN SÉE. The first part of the note relates to the presence of bacilli in aneurism, which is remarked upon as a curious coincidence. The other two parts relate to the methods of the internal treatment of aneurisms.

Professor Sée speaks especially of the treatment of aneurisms by iodide of potassium and antipyrin, the good effects of which are confirmed by Dujardin-Beaumetz. M. Sée shows that the iodide of sodium treatment is theoretical, and has not the good results of treatment by iodide of potassium, which is much superior to iodide of sodium in diseases of the heart and blood-vessels, because in small doses the potash salts, according to Traube, act distinctly on the muscular-motor system, and even on the inhibitory nerves of the cardiac arrest. The potash salts are toxic only when used subcutaneously in large doses. Even in doses of 10 or 15 grams a day, the iodide of potassium is not toxic, and any ill effects must be attributed to the iodine rather than to the potassium.

In regard to the use of antipyrin with iodide of potassium, according to Sée, antipyrin has no bad effect on the heart, but, on the other hand, calms the impulse of the heart, which is generally exaggerated in cases of aneurism, and in this way rather adds to the ease with which coagulation takes place, thus favoring the cure. More than this, antipyrin dissipates the sharp pains, the painful cardiac oppression, and the anginous sensations so frequently associated with aneurism. Dujardin-Beaumetz prefers phenacetin to antipyrin in these cases. It is not so soluble as antipyrin, and must be administered in wafers, but to produce the same analgesic effect as antipyrin one

requires only half the dose. Both Sée and Dujardin-Beaumetz condemn all surgical interference in aneurism of the aorta.

THE NEXT ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

It has been ascertained that, at the time selected for the next annual meeting, *i.e.*, the first Tuesday in June, in Newport, R. I., the chief hotels of that city will not be open for guests, and neither will the summer arrangements for boating excursions be in order. By deferring the meeting until the *last Tuesday* in June all these local difficulties will be obviated, and the State Medical Society of Rhode Island has already taken steps to coöperate cordially with the local committee of arrangements in making the meeting one of the most pleasant and successful ever held. We think the committee of arrangements should not hesitate in making the proposed change in the time for holding the meeting, when it would so obviously add to the comfort of all the parties interested.

EDITORIAL NOTES.

ACETIC ACID AS AN ANTISEPTIC IN OBSTETRICS.—DR. F. ENGELMAN thinks that acetic acid is as much antiseptic as carbolic acid, and has the advantage of being non-injurious, even in a tolerably concentrated form. It has a decidedly styptic effect, which is an additional advantage in midwifery practice, and is very diffusible, penetrating the tissues to a much greater extent than most other antiseptics. Its action on instruments is less prejudicial than that of corrosive sublimate. A pair of forceps may be kept in a 3 per cent. solution of acetic acid for a quarter of an hour without being injured, but an irrigator is liable to injury from prolonged use of acetic acid solutions. After using acetic acid the hands must be washed twice, since soap will not dissolve in the presence of the acid. Engelman generally uses a 3 per cent. solution, though he has used a 5 per cent., which, however, is apt to cause a sensation of smarting in any spot where the surface is broken. In none of the cases in which Engelman used acetic acid was there any abnormal rise of temperature.

LEPROSY TREATMENT IN HAWAII.—It is proposed to establish an efficient hospital, in one of

the most salubrious localities in the Sandwich Islands, for the treatment of leprosy. It is felt by the Government that any attempts at cure must be carried out under the most favorable circumstances, and a physician will probably be engaged who is conversant with and can carry out the treatment advocated by Dr. P. G. Unna, of Hamburg. But so long as the utter indifference to isolation of lepers in the Sandwich Islands continues, any plan of therapeutics must be looked upon as scarcely less than vain. The isolation of lepers is as important to day as it was in the time of Moses. The principles of the Mosaic Code have not been improved upon, and the farther sanitarians get away from them the more they stumble.

MEDICAL LEGISLATION IN NEW ZEALAND.—The new Medical Act Amendment Bill of New Zealand, now under discussion, provides for the creation of a General Council of Medical Education and Registration, to consist of twelve persons. All persons registered in the United Kingdom are to be registerable in New Zealand. Any person assuming a title to which he is not entitled is liable to a fine of £50. Persons representing themselves as registered, but not really so, are liable to the same penalty, as is any person not a registered practitioner, but who practices medicine, surgery or midwifery, using the designation of or representing himself to be a physician, surgeon, doctor, apothecary, professor, specialist, or consultant in medicine, surgery or midwifery.

PUPILLARY CHANGES IN CHRONIC PULMONARY DISEASE are discussed by COMINI in *Annali di Oftalmologia*. He cites histories of nine cases of mydriasis in phthisis. This occurred more frequently on the right side, and coincidently with disease at the apex of the lung on the same side. In some cases it was bilateral. In some cases also the mydriasis was accompanied by photophobia and paresis of accommodation. Rampoldi first described the transitory dilatation of the pupil, and maintained that it was directly connected with temporary aggravation of the symptoms. In Comini's cases there appeared to be no such connection. Rampoldi assigned reflex irritation as the cause, but Comini suggests that the sympathetic may be directly involved in the disease.

ABSENCE OF RIGHT PARIETAL BONE AT BIRTH.—MR. G. WASHINGTON ISAAC records a remark-

able case of a child born without a right parietal bone. Over its site the skin was loose and distended with fluid; palpation produced fluctuation. On pressing the fingers firmly into the margins of the swelling the edges of the surrounding bones could be felt. A month later the site was occupied by bone, except a small circular space about midway between the parietal eminence and the posterior superior angle of the bone. About six weeks after birth this hole filled up. The bone was quite firm, but somewhat nodular, especially over the site of the space the last to disappear. In this case the labor was easy and rapid, and the swelling, which somewhat resembled a caput succedaneum, distinctly increased for three or four days.

PERITONITIS CAUSED BY ROUND WORMS.—SURGEON-MAJOR R. D. MURRAY, of the Indian Medical Service, reports three cases of this kind. As the result of his observations in India he has no doubt that the round worm (*ascaris lumbricoides*) is capable of causing perforation of the bowel, and actually boring its way into the peritoneal cavity. These entozoa are very prevalent in Eastern countries and among the dark races generally, and the mortality caused by them is probably greater than is generally supposed. Surgeon-Major Murray says that in times of cholera they are frequently a predisposing cause of the disease.

CREMATION IN ITALY.—The Italian Government, which has done a good deal towards encouraging cremation, has recently applied the principle of protection to dead bodies imported for cremation. Cremation is illegal in France. Not long since a Mr. Morin left instructions that his body should be taken from Paris to Milan, and cremated. The cremation cost about \$3.75, but the Italian Custom House levied \$70 duty on the body when it entered the country, and the same amount as export duty on the ashes when they were taken back to France.

THE LONDON SANITARY PROTECTIVE ASSOCIATION, of which the Duke of Argyll is President, is a society the objects of which are to provide its members, at moderate cost, with such advice and supervision as shall ensure the proper sanitary condition of their own dwellings. The Association has no capital stock, and cannot be used for purposes of profit.

YELLOW FEVER.—Owing to cooler weather the prevalence of the fever in Jacksonville is declining, and much less alarm is felt throughout the South. Light frost has occurred in Tennessee, and snow in some parts of Virginia, and quarantine has been relaxed or discontinued in many places. The whole number of cases reported in Jacksonville, Fla., to Oct. 1st, is 2,725, and the number of deaths 263.

TANNIN IN PHTHISIS.—DR. DE VITI DEMARCO, of Otranto, has successfully used tannin for reducing the temperature of phthisis, and finds that it sometimes has a beneficial effect on the course of the disease. He gives the tannin in the form of a pill, every two hours, each pill containing gr. 7.5 of tannin and gr. 0.25 of creasote. Long-continued use of the tannin seems to produce no unpleasant symptoms.

M. CHEVREUL completed his 102d year on August 25. Though he is suffering from no special complaint, he has become so infirm that he is obliged to pass the greater part of his time in bed. He has not been able to attend the meetings of the Institute for more than three months.

THE PROFESSIONAL DISINFECTOR has appeared in some of the European cities. One in London, a Mr. W. G. Lacy, advertises that he is employed by leading London physicians, and has a private carriage for removing infectious cases without publicity.

THE INTERMITTENT GALVANIC CURRENT is said by Dr. J. R. Seymour to be efficacious in case of sting by the physalia (Portuguese Man-of-War). Perhaps it might be efficacious also in other cases of poisonous and painful sting.

SOCIETY PROCEEDINGS.

Congress of American Physicians and Surgeons.

The first Triennial Meeting of the Congress, held in Washington, September 18, 19 and 20, 1888.

FIRST SESSION—TUESDAY.

The meeting to receive the report of the Executive Committee and for organization was held at 1 P.M. Tuesday, in the Grand Army Building.

The meeting was called to order by DR. WILLIAM PEPPER, Chairman of the Executive Committee, who spoke as follows:

On behalf of the Executive Committee I have to announce the manner in which we have discharged our responsible duty. The present meeting is the result of prolonged deliberation which began to take shape more than four years ago, before the attention of the medical profession became occupied with preparation for the meeting of the International Medical Congress, but all action was deferred in order that there should not be the semblance of interference with that important meeting. This delay has served to render more conspicuous the necessity for this organization.

In order to produce the best scientific results, it is essential that the numbers in attendance shall be reasonably limited and that, as far as possible, the same men shall attend successive meetings, securing a continuity of intellectual life and activity. A large proportion of those interested in the development of such an organization are, as I am myself, warmly attached to the American Medical Association, and determined to exert their influence to maintain and promote the success of that great National organization.

Your Committee ventures to hope that their provisions will meet the unanimous approval of the Congress. We have recommended that the sessions shall be triennial. We have jealously guarded against the admission of parliamentary business, as the functions of the organization are designed to be absolutely or exclusively scientific. We have also guarded the independent sovereignty of each participating Society.

Lastly, the Executive Committee has reached the conclusion that the selection of the President of each Congress shall be entrusted to the Executive Committee then in office. Close study of the conditions of this Congress has led the Committee to feel that if this organization were to have the effect of favoring the multiplication and subdivision of special societies, it would be nothing less than a calamity. We have therefore provided that the admission of new associations shall be secured only by the unanimous vote of the Executive Committee.

It remains only to add that, in exerting the privilege of selecting a President for the first Congress of American Physicians and Surgeons, we feel that we have been guided to the choice of a man whose admirable personal character, whose high attainments, and whose illustrious services in the cause of literature, of science, and of the entire medical profession, mark him as entitled to this great honor. It gives us, therefore, the utmost gratification to present to you our President, Dr. John Shaw Billings, and to announce that the Congress of American Physicians and Surgeons is now duly organized.

President DR. J. S. BILLINGS then took the chair and responded in a brief address.

The *Address of Welcome* was delivered by DR. SAMUEL C. BUSEY, of Washington.

The consideration of the By-laws was next taken up.

1. This organization shall be known as the Congress of American Physicians and Surgeons.

2. It shall be composed of National Associations for the promotion of medical and allied sciences.

3. It shall hold its sessions triennially in the city of Washington, D. C.

4. The officers of the Congress shall be a President, Vice-Presidents, a Secretary, a Treasurer and an Executive Committee.

5. The President shall be elected by the Executive Committee, of which he shall be *ex officio* a member. He shall preside at the sessions of the Congress. He shall deliver an address.

6. The Presidents of the participating societies shall be *ex officio* the Vice-Presidents of the Congress.

7. The Secretary and Treasurer shall be elected by the Executive Committee. They shall be *ex officio* members of the Executive Committee.

8. The Executive Committee shall be composed of one member from each participating society, and said members shall be elected by the various societies at the next annual meetings subsequent to the Congress. It shall be charged with all duties pertaining to the organization of and preparation for the ensuing Congress, including the election of all officers and of a Committee of Arrangements. It shall superintend the publication of the Transactions of the Congress.

9. The expenses of the Congress shall be divided between the participating societies in proportion to their membership.

10. The admission of new associations to participation in the Congress shall be by unanimous vote of the Executive Committee.

These By-laws were unanimously adopted.
Adjourned.

THIRD SESSION.

DR. CHARLES K. MILLS, of Philadelphia, read a paper on

CEREBRAL LOCALIZATION IN ITS PRACTICAL RELATIONS.

In his introductory remarks, the speaker referred to the fact that from the clinical observation of practical physicians sprung the conceptions out of which developed the science and art of cerebral localization. Allusion was made to the discoveries of Bouillaud and of Broca in speech localization; to the announcement by J. Hughlings Jackson in 1864 that certain convolutions superintended the delicate movements of the hand which were under the immediate control of the mind, and to Hitzig's researches having originated from his observing certain ocular movements during galvanization of the heads of his patients. Brief reference was made to the history of Amer-

ican work in localization; to the investigations in 1874 of the New York Society of Neurology and Electrology; to Putnam's discovery that irritation of the white matter beneath definite cortical centres produced movements similar to those caused by irritation of the centres themselves; to the labors of Wood and Ott on the head centres, and to the light thrown by these investigations upon the mechanism of fever and the action of drugs upon different forms of high temperature.

Trephining for cases of insanity, particularly when guided by the rules of localization, was briefly considered. Two of the recent cases of brain operation reported by Bennett and Gould and by MacEwen were cited as possibly opening a new field for surgical interference in insanity, the excision of cortical areas as a method of treatment when certain subjective phenomena such as hallucinations of sight or hearing can be given a local habitation in the brain.

In turning to the surgical aspect of cerebral localization in its practical relations, the author stated that his remarks would be chiefly concerned with questions of diagnosis. The forms of disease in which such diagnosis has been used are intracranial tumors, cysts, fractures, hæmorrhages, abscesses and discharging cortical areas.

In considering the localization of brain tumors, Dr. Mills referred to twenty cases of autopsies occurring in his own personal experience, in about one-half of which the tumors were in surgically accessible areas, and in at least one-fourth of which successful operations might have been performed. He advocated from this experience the excision of old gummata, and also, in special cases, of tubercular growths. The value of localization was shown in cases of fracture where the extent of the unseen damage could not be told by the position and character of the visible lesions.

Of the different forms of intracranial hæmorrhage, subdural, cortical and intracerebral were most amenable to localizing diagnosis. The rules for the local diagnosis of these forms of hæmorrhage were then given. Dr. Mills advocated the performance of trephining in exceptional cases of hæmorrhage into the ganglia and capsules; cases in which symptoms indicated that the bleeding had not broken into and inundated the ventricles. From the sections, the best site for operation in such cases, all things considered, would be in the anterior portion of the first or second temporal gyrus. He favored Hughlings Jackson's suggestion of excising localized cortical areas even when coarse lesions could not be made out, in cases of spasm beginning locally or deliberately.

The inaccessible areas had been narrowed down by the venturesome surgical explorer, and had become reduced to the middle regions of the base and its bordering convolutions, the corpora quadrigemina and the pons oblongata.

The characteristics of localizing symptoms were

described as phenomena of irritation, destruction, instability, pressure, invasion and reflex action. Signal symptoms and the serial order of motor phenomena were discussed. Briefly, in certain regions of the brain an accurate topographical diagnosis could be made with great certainty from positive localizing symptoms. These brain areas include the entire motor zone, in which are embraced the motor or emissive speech area, the region of Broca; the visual area in the cuneus, giving lateral hemianopsia, and the intracerebral visual tracts; possibly, also, the angular gyri and the lateral surface of the occipital lobe. In other regions of the encephalon the topographical diagnosis could be made with sufficient accuracy even for surgical purposes, by the study of the positive symptoms with, in addition, the application of processes of exclusion and successive differentiation. Particular stress was here laid upon the importance of pressure and invasion symptoms. These areas for approximately certain topographical diagnosis include the cerebellum, the prefrontal lobe, the temporal lobe, and even certain cranial nerve districts, as the auditory and facial when the lesion could be localized within the cranium between the superficial origin of the nerves and their entrance into their foramina or canals of exit.

Motor localization had become almost an exact science. The latest physiological research bearing upon the subdivision of the motor area, and the light thrown upon the question by surgical operations, were discussed. It was held to be imperative for the neurologist and surgeon to have exact knowledge, not only of the anterior and the posterior limits, but also of horizontal subdivisions of the motor zone.

The old method of dividing the motor zone into three elliptical or circular areas, from above downward, was considered insufficient; but the neurologist should be able to locate for the surgeon, from a study of motor phenomena, at least seven or eight positions for trephining; these positions being selected by a close study of the initial or signal symptoms, the serial order of movements, and also of the amount and character of the temporary paralysis after the seizure and the method of extension of the persisting palsy.

The view of Ferrier as to the localization of the centre for ocular and head movements in the second frontal gyre was concurred in, and observations were cited in its support; when turning of the head and eyes was the starting point of the spasm, this localization was probably indicated. The fact that cortical oculo-motor palsies were not present as a persistent condition even with definite lesions of the second frontal gyre, was explained by the intimate and peculiar connections of the oculo-motor nuclei at the base; they do not persist for the same reason that paralysis in the upper distribution of the facial nerve is so seldom

permanent. He believed that there was a special centre for the orbicularis palpebrarum movements, probably below and adjacent to the oculo-motor centre.

Dwelling upon the sources of error in motor localization, the question of reflex spasm, of unilateral convulsions due to uræmia, lead, and other toxic agents, and to hysteria and hystero-epilepsy, were briefly discussed. Sufficient diagnostic difficulties are still present to make it important in the light of the tremendous impetus towards operation, to carefully examine all questions of differential diagnosis. In certain spasmodic affections, the resemblance between those clearly of reflex origin and those as demonstrably central, were very striking. Trigeminal epilepsy, whether dural, facial, dental, nasal, pharyngeal, laryngeal, or of whatever local origin, might cause unilateral convulsions, or even mono spasm. Dural epilepsies are especially worthy of attention, as shown by the researches of Dupuy, Burdon-Sanderson, Brown-Sequard, the New York Society of Neurology and Electrology, Duret, Boche Fontaine, and François Franck. Franck has made a careful comparison and contrast of cortical epilepsies with those which are reflex and toxic, including those which are due to irritative lesions of the dura mater.

The author referred to five cases in his own experience in which operations had been performed for epilepsies apparently reflex in character: two in which spicules of bone had been removed from the dura mater, one in which an old inflammatory lesion of the membranes and cortex from traumatism, was present, and two in which scalp cicatrices were removed. While fearing, with Franck, that we were not always able to make a trenchant separation between reflex and cortical epilepsies, some points of separation were indicated. True Jacksonian epilepsy, Dr. Mills believed, was sometimes reflex in origin, that is, that it was established by intense, persistent peripheral irritation; and even after the irritation had been removed, the cortical discharge continued; herein perhaps lays the explanation of Jacksonian spasm without coarse lesion; and herein also, perhaps, was to be found the justification for the excision of cortical discharging areas. The author referred to a case in which epilepsy clearly of Jacksonian type was just as clearly due to a fibroma involving a nerve trunk on the palmar surface of the hand, and in which the patient was cured by removal of the growth.

With reference to sensorial localization, cutaneous and muscular, the views of Horsley and Schäfer with reference to the limbic lobe were accepted in part. The speaker believed that the evidence was becoming stronger every day in favor of the existence of a zone for the sensations of touch, pain and temperature separate from cortical motor areas. Collections of cases, such as those of Starr,

Petrina, and others, which were supposed to indicate that the sensory areas coincide largely with those of motion, were not regarded as overcoming the positive evidence of decided destructive lesions of the cortical motor zone without any sensory disturbance. From a study of his personal cases, he had concluded that they did not support the doctrine that the motor and sensory areas coincide. Notes of these cases were given, and also cases from other reporters. He believed, with Bechterew, that the loss of sensation in animals who have had the motor area destroyed, was apparent and not real. Some light had been thrown upon this disputed question by careful examination of patients after operation, particularly when certain definite dural areas had been clearly excised. Reference was made to the cases of Horsley, Weir and Seguin, Lloyd and Deaver, and others. The speaker believed that these observations and experiments pointed clearly to the theory that the motor zones were motor alone in function. His view was, the region for general sensation, including touch, pain, temperature, and perhaps pressure, location and muscular sense, could be divided into special areas for the various distinct portions of the body, and that these centres lay alongside and had close anatomical and morphological relations with corresponding motor centres, but that they were not identical with them. He located these sensory areas in the gyrus fornicatus, the hippocampal gyre, the pre-cuneus, and the lateral postero-parietal region.

The practical conclusion was that the neurologist and surgeon must depend upon motor symptoms alone in fixing the site for operation in cases where the motor lesions were definite. When positive sensory symptoms were present they might sometimes serve to aid in locating more exactly the position for operation, but the data were not sufficient for positive reliance. The question of morphological peculiarities of the human brain was briefly alluded to as having some practical bearing upon the subject under discussion. The position of the so-called angular gyre and aberrations in the parieto-occipital region, were more particularly discussed. Even the fissure of Sylvius, the central and parieto-occipital fissures sometimes present considerable variation, but, as a rule, such aberrations were not confusing in operating on the motor region after the methods of Broca, Thane, and others.

DR. ROSWELL PARK, of Buffalo, N. Y., read a paper on

CEREBRAL LOCALIZATION IN ITS SURGICAL RELATIONS.

The following is an abstract:

Cerebral Topographical Anatomy.—The areas which most concern the surgeon are those which cluster around the fissure of Rolando. A few bony prominences deserve attention is this con-

nection; that at the point of the nose, known as the glabella; the external occipital protuberance, known also as the inion; the point of the cervix half-way between these two, the bregma; the external angle of the orbit, the tip of the mastoid process, and the lower border of the alveolar process of the upper jaw. The fissure of Rolando has its upper end about 5 centimetres back of the bregma, but does not run quite in the middle line, its lower end lies about $\frac{1}{2}$ centimetre behind the auricular-bregmatic line and a little above an imaginary line projected backward from the superciliary ridge, thus the lower end of this fissure will be found about 6 centimetres above and a little behind the external auditory canal, or about an inch behind the bifurcation of the fissure of Sylvius. In regard to the convolutions, it must be stated that lesions of the dura-mater overlying motor areas are not always to be distinguished from lesions in the cortex beneath. It is enough for the surgeon that a lesion of some kind can be located with reasonable accuracy. It matters not whether this is an old, irritative lesion; an acute suppurative process between the bone and the brain, or an abscess or tumor of the brain itself. The indication for exploration is just as strong in either case.

When and Where can one Trephine with Safety.

—The safest rule is to first apply the trephine over those areas which do not overlie large vascular channels. Afterward the opening may be extended in any direction and to any required extent. The greatest hesitation is with regard to opening one of the sinuses. Two dangers attend such an accident, one fatal air embolism, the other profuse hæmorrhage. The former danger is almost a theoretical one, and the other may be overcome by plugging the sinus or closing the wound with a fine needle and suture.

Cerebral and Cerebellar Abscess.—Bergmann has shown that abscess of the brain has but one result—death—and that the surgeon's knife offers the only relief. So far as we know there is no such thing as idiopathic abscess of the brain. It is always the result of some external wound of the head or some extension from diseased surrounding bone. The only exceptions to this statement are to be found in the case of pyæmic or tuberculous abscess. The symptoms of deep brain abscess may be divided into three groups, according to causes. 1. Those which are inseparable from indications of suppuration. Such are those disturbances which may follow any deep-seated foreign body. 2. Symptoms of increased intra-cranial pressure and of disturbed relations. 3. Special symptoms by which the locality of the disturbance may be ascertained. So long as the gray matter is undestroyed, the collection of pus may assume large dimensions and still no intense motor symptoms appear. Local elevation of temperature over the abscess is a symptom of importance when

present, but its absence need not negative a diagnosis if made on other grounds. Wernicke has stated that there is a peculiar disturbance of speech which points to a lesion of the temporal region. This is the confusion of correct with incorrect words. In the general diagnosis of cerebral abscess it is to be remembered that there usually is a latent period which may continue for an indefinite period. The stage of active symptoms is usually ushered in by more or less headache, and slight rise in temperature. Local or motor symptoms can only be expected when the abscess is in the motor area of the brain.

In operating for abscess of the brain, operators until recently have satisfied themselves with incising the dura and doing nothing more. With the introduction of aspirating methods the hollow needle came to be used for brain exploration. The dangers of this procedure are certainly small. The danger of hæmorrhage has been overestimated. A temporary tampon will control deep hæmorrhage, while in bleeding from the pia-mater the vessels may be secured with ligatures or serra-finus. In brain abscess consequent upon middle-ear disease, the best point to trephine, according to Bergmann, is above and behind the ear. Macewen proposes a second counter-opening on a level with the floor of the abscess.

Brain Tumors.—The principal features of these growths which produce symptoms are location, size, character, rapidity and manner of growth, and extent to which they affect surrounding brain tissue. Considered in their surgical relations we may, with Bergmann, divide them into (a) the circumscribed, or encapsulated, and (b) the infiltrated, or diffuse, around which, as a rule, there is a zone of softening. A third class may be mentioned, *i. e.*, those growing from the interior of the cranium, from the bone or dura.

If a reasonably satisfactory diagnosis can be made it must be indeed an extensive growth of the cranial vault which shall contraindicate operation. The question of what and how many brain tumors are operable has been best answered by White. He found in one hundred brain tumors met with in the dead-room of Guy's Hospital, that only nine could have been removed—one tuberculous nodule, four sarcomas, two undetermined tumors, one cyst, and one myxoma. Nine per cent. could have been attacked, providing a fairly accurate diagnosis had been made. Of these nine tumors, five were located in the cerebellum, one in the frontal lobe, and one in the extremity of the occipital. It is doubtful whether these seven could have been recognized accurately enough during life to justify operation, while the myxoma was impossible to diagnose. It is thus seen that by no means all tumors which can be diagnosed can be deemed suitable for operation.

Operation for Intra-cranial Tumors.—The head should be shaved two or three days before opera-

tion, washed with green soap and ether, and antiseptic compresses applied. Chloroform should be, as a rule, the anæsthetic, on account of its contracting influence on the vessels of the brain. Morphia, hypodermically, and ergot may be resorted to for the same purpose. The author suggested that after localizing the lesion, a small, disinfected, headless tack be driven through the scalp into the bone at the point determined upon. After the dissection of the external flap this will point out accurately the point to be first attacked.

In order to prevent hæmorrhage, the author had found a spray antipyrin solution (1:40) of service. The semi-lunar flap is the proper-shaped one to raise. Its apex should be in such a position as to allow of drainage with the patient on his back. The periosteum should preferably be raised with the flap. The use of the trephine is preferable to the hammer and chisel. Since Macewen has taught us how to preserve the fragments of bone and restore them to their place, his method has been widely tried and universally commended. The dura mater should be incised around a large part of the area at a distance of $\frac{1}{8}$ to $\frac{1}{4}$ inch from the edge of the bone. The appearance of the dura is sometimes a guide to trouble beneath. In recent cases it is sometimes highly vascular; in old cases it may be yellowish or discolored. Wherever adherent it should be freely excised. Horsley claims that marked protrusion of the dura indicates pathological intra-cranial tension. The color of the brain should be noted, remembering that the cerebellum has normally a different appearance from the cerebrum. Sometimes where there is uncertainty as to which convolution is the desired one, the battery may be employed. Where no indication of lesion is found, further exploration may be conducted with a small aspirating needle or a blunt probe.

Should a tumor be discovered the incisions for its removal should be made perpendicularly to the cortex, for the purpose of avoiding hæmorrhage and division of the conducting fibres. Removal of a layer of cortex whether normal or abnormal, does not leave, as one might fear, a prominent gap with vertical sides, since in a short time the depressed portion is made to bulge almost to the level of the intact parts surrounding. In addition the cut edges are slightly everted and if less brain is removed than bone the edges are extended into the opening in the skull; thus there is a continual normal tendency to hernia, but Bergmann and others have shown that this tendency to hernia-cerebri is in inverse ratio to the area of bone removed. Experience has taught that it is wise to remove brain tissue to an extent greater than was at first considered justifiable. In all operations for epilepsy the portions of cortex nearest the evident lesion should be freely removed.

The matter of drainage must be determined according to the circumstances of the case. An

abscess must be drained as long as pus is discharged. After the antiseptic removal of a tumor the cavity should seldom be drained for more than twenty-four hours. The provision for drainage may be removed on the second day, and the wound dressed with reasonable pressure over the flap. Exudation naturally collecting in this cavity will be retained, and will give rise to some pain and disturbance, but so long as the symptoms from this are not severe the wound may be left with confidence that the fluid will be reabsorbed and that the pressure will be the best check to protrusion.

Dangers of the Operation.—The principal immediate dangers are two: hæmorrhage and oedema. Hæmorrhage from the pia or from the brain substance is usually readily controlled, but disastrous hæmorrhage may occur from unexpected sources. When there is bleeding a temporary tampon of iodoform gauze may be applied. The dural and skin flaps are laid over this and an absorbent dressing applied. At the end of forty-eight hours this may be removed and sutures inserted.

The second danger, that of acute brain oedema, may be brought about either by increase of intra-arterial pressure, or by obstruction of the venous channels of escape. Under this accumulation the brain becomes more sodden. Removal of a portion of the cranium is virtually a diminution of the pressure normally exercised on its contents, and is often followed by reaction with production of excess of fluid.

The author had collected reports of 63 cases which were presented in summary and in tabular form. Seventeen of these terminated fatally, although only 5 of these deaths could properly be attributed to the operation. Fifteen of the cases were abscesses, subdural or subcortical. In 11 cases the lesion was a tumor, exclusive of tubercular nodules. Of cysts, properly speaking, there were 12. The 25 other cases were of a miscellaneous nature. In three cases the true character of the lesion was not revealed during the operation, and was only discovered at the autopsy. In two cases in which no palpable or visible lesion was discovered at the time of operating, the symptoms which led to the performance of the operation were nevertheless relieved, though nothing but careful exploration was practiced.

Of the 63 operations, 17 were performed by American surgeons. Those who have themselves operated more than once are, with the number of their operations: Macewen, 12; Horsley, 11; Bergmann, 4; Weir, 3; Keen, 3; and Parks, 3.

DR. DAVID FERRIER said that he took special pride and satisfaction in the fact that this subject had been assigned such an important place in this great gathering of the profession in this country. He had long cherished the idea that the determination of the functions of the brain would in time

lead to the successful treatment by surgery of some of the most distressing ailments of our fellow creatures. When he first broached the possibility of this he received little encouragement, but now cerebral surgery had become a distinct branch of the art of surgery. There is a great future for cerebral surgery. We must, however, be cautious, lest we do things which our better judgment and larger experience may not consider altogether justifiable. While there have been many successes, yet there had been some failures. He alluded more particularly to cases of Jacksonian epilepsy. The discharging lesion has been removed in many of these cases without permanent cure. Care must also be taken that in curing one affliction we do not induce a greater evil. There is yet much to be learned in regard to the functions of the brain and in regard to the diagnosis of cerebral disease.

MR. VICTOR HORSLEY described briefly the results of his experiments upon the motor region. He believed that here three functions were clearly represented. 1. The representation of the so-called tactile sense; 2, representative of the so-called motor sense; and 3, the great representative of movement. It is found that morphologically the large cells in the fourth layer are concerned in the representation of movement, and he could not understand why we should not allot to the small cells in the upper layer the representation of sensation. He had divided the motor region into minute areas and studied the effect of irritation of these separate areas. He had found that the representation for any part was not limited to one minute portion of the brain, but that there was a focal point where it was strongest, and then it gradually diminished as we passed outside. In his different experiments he had met with certain points of difference. These were attributable to the employment of different species of monkeys. He now uses only the bonnet monkey, and for all practical surgical purposes the results are perfectly applicable to man.

Experiments performed during the past summer had enabled him to prove that the convulsions of so-called Jacksonian epilepsy were solely due to the cortex, and not at all dependent upon the spinal cord or upon the bulbar spinal system.

In cerebral surgery we practice simply the ordinary rules of surgery. In cutting out the bone, a 1-inch trephine should be first used to determine the thickness of the skull. The surgical engine may then be used to cut almost through the portion of bone to be removed. The bone may then be removed with strong forceps. The dura mater should be first separated. If nothing is found and the operation is an exploratory one, the dura mater should be opened. If we purpose to use Faradism for the recognition of certain areas, it is important that the ordinary antiseptic solutions should not be applied to the brain, for they tend

to prevent the response to the electric current.

Parenchymatous hæmorrhage may be prevented by the use of morphia. The ligature must be always applied if possible; never pack the wound. In regard to the recurrence of epilepsy in operations performed for the relief of this affection, he considered that the recurrence was due to incomplete operation. In those cases in which he had removed to his own satisfaction not only the lesion but the surrounding brain substance for at least 1 centimetre, there had been no return. He agreed with the previous speaker that there was danger of doing too much in certain cases.

DR. M. ALLEN STARR, of New York, said:—It is evident from the statements just made that cerebral surgery has a great future, but is dependent on neurology for its guide. The burden of responsibility for future progress rests upon physicians, for diagnosis must precede operation. The great discoveries in cerebral localization made in the past, have been reached by means of the collection and analysis of large numbers of cases of localized disease in man, rather than through physiological experiment. Future advance must be in the same line. Hence the importance, too much overlooked in this country, of recording carefully every case of cerebral disease. And to be properly recorded it must be carefully examined. This is especially necessary in the cases of disturbances of speech.

The history of aphasia presents three epochs: First, that of Broca, in which the fact was established that lesions of the third frontal convolution on the left hemisphere produce aphasia. Secondly, that of Wernicke, in which a distinction between sensory and motor aphasia was drawn, and the former was shown, in a few cases, to be due to lesion of the first temporal convolution. Thirdly, that of Charcot, in which the four mental elements of speech were carefully separated. Charcot says, "A word is a complexus; in it we can discover, in persons of education, four distinct elements; the auditory memory picture, by whose means we are able to grasp the sense of words heard; the visual memory picture, which enables us to comprehend the words written or printed; and also two motor elements, the motor memory of articulation, and the motor memory of writing; the first developed by the repetition of movements of the tongue and lips necessary to pronounce a word, the second by the practice of motions of the hand and fingers necessary for writing." Each of these memories being distinct, can be lost. The result is disturbance of speech, whose forms vary. The loss of visual memories produces verbal amnesia and word blindness; the loss of auditory memories causes word deafness; the loss of motor memories of writing results in agraphia; the loss of motor memories of pronunciation produces motor aphasia. Individuals differ largely in the degree of cultivation of each of these mem-

ories, and hence suffer differently when affected by their loss, *e.g.*, the literary man presenting far more symptoms than a common laborer when his memories of things read are lost. Another fact of importance is the independence of speech and thought. Aphasics may retain their musical faculties, and may sing when they can not talk. Thinking, though largely done by the aid of speech, is not dependent upon it. We have memory pictures of the shape, form, sound and odor of objects, independent of their names, and unless these are intact in the brain, the perception of the object does not produce recognition of its nature or use, and does not awaken the memory of its name. The condition termed apoaxia, is found with aphasia in some cases, but not in all.

Turning from clinical distinctions to pathology, the localization of the various memories necessary to speech, was discussed. Motor aphasia is produced by lesions in Broca's centre, or in the tract from that centre to the cranial nerve nuclei. If it is due to lesion in the latter, it is temporary and accompanied by other local symptoms. The situation of the lesion producing motor agraphia is uncertain. Word deafness is due to lesion in the first temporal convolution, and is associated with word blindness when the lesion extends to the supra-marginal convolution and angular gyrus. All the cases of pure sensory aphasia in which the lesion was limited to these parts (41 in number) were collected, and a chart of the brain was shown to support the localization stated. The condition of apoaxia was shown to accompany lesions situated in or beneath the angular gyrus.

The integrity of the connecting tracts between the various memory-centres is also necessary to the act of speech. These can be tested; thus repetition after another, copying, writing at dictation and reading aloud, are acts involving two separate areas and their connecting tract. Lesions of these tracts produce disturbances of speech, some of which Licktheim has described. But cases have not yet been sufficiently well tested to warrant any conclusions. The necessity of careful examination of all cases to detect various defects was dwelt upon, and the speaker closed by indicating how readily accessible to surgical interference the speech areas of the brain are.

DR. W. W. KEEN, of Philadelphia, compared the head cavity to the other cavities of the body. The brain may be considered to be made up of a number of viscera having separate and distinct functions, and each of which has its own physiological signs and symptoms. While we should be careful not to do too much, we should not err in the other direction. The timidity with which the surgeon formerly approached the abdominal cavity was remarkable; the boldness with which we now attack lesions of this cavity, is almost appalling, and the success equally gratifying. This history will be repeated in the case of the brain.

DR. ROBERT F. WEIR, of New York, had, since 1883, operated in ten cases of brain surgery: three times for tumor, three for abscess, twice for hæmorrhage into the cerebrum where there was no external injury to indicate its locality; once for epilepsy, and once for cerebral pain. In the last case the tumor was so deep that there was nothing to indicate its presence after the brain was exposed. It was one and a half inches below the surface. The growth proved to be a sarcoma. The operation was done last November. The patient is still living, but there are signs of a recurrence of the growth.

Bergmann says that operation should not be performed when the patient is in coma, or when the tumor is large. Dr. Keen has removed a tumor weighing over four ounces, with recovery, and Mr. Horsley has removed, with success, a tumor weighing four and a half ounces, from a patient in a state of coma. Sometimes, although no tumor is found, the operation causes disappearance of the symptoms by relieving the pressure. This might be applicable in apoplectic hæmorrhage when the clot could not be removed.

I have gone over the brain to find what parts are accessible to surgical interference. We are able to strip up the longitudinal and lateral sinuses to a considerable extent. The dura-mater may be separated for a considerable distance from the bone. He had been able to raise up the frontal lobes so as to see the anterior clinoid processes, and he had been able to feel the foramen magnum.

American Surgical Association.

Annual Meeting, held in the Main Hall, Grand Army Building, Washington, D. C., September 18, 19, 20, 1888.

(Continued from p. 460.)

TUESDAY, FIRST DAY.—AFTERNOON SESSION.

The Association was called to order at 2 P.M., by PRESIDENT AGNEW.

NICHOLAS SENN, M.D., of Milwaukee, read a paper on

THE RELATION OF MICROÖRGANISMS TO INJURIES AND SURGICAL DISEASES.

The paper was so extensive that in the limited time allotted to its consideration, the author was able to refer to but a few of the points which it contained. At the present time no argument is required to show that many special conditions are due to the presence of bacteria. In regard to the so-called hereditary transmission of disease, the author held that the specific microbes of the specific diseases are transmitted directly from parent to child. In evidence of this he referred to cases of so-called hereditary osteomyelitis in

newly-born infants. In other cases while this same origin may be inferred we have, as yet, no direct evidence that such is the case. In regard to the questions whether or not pathogenic microorganisms exist in the healthy body, while the results of some observers point in this direction, the results of others are opposed to the existence of pathogenic organisms in the healthy body. The conclusion was that under certain circumstances, pathogenic organisms might be present. There is proof of this in cases in which after accidental injury there is localization of these pathogenic organisms. Acute suppurative infections osteo-myelitis following slight injury or exposure was cited as an illustration of this fact. This localization is favored by certain anatomical conditions. The antagonism among microorganisms was being considered when the time of the author expired.

DR. ROSWELL PARK, of Buffalo, had done some work in this direction. He had examined pus from fifty-two sources, and presented a table showing the number of cases in which pyogenic bacteria were found.

He had also prepared culture media with various antiseptics in different proportions, including carbolic acid, iodoform, iodine naphthaline, hydro-naphthal, resorcin, trichlorophenol, creolin sulpho-carbolate of soda, boric acid, perchloride of iron, antipyrin, antifebrin and quinine. Almost the only one of these antiseptic jellies as thus prepared which has presented all growths was hydro-naphthol, 1:100. This shows that hydro-naphthol can be relied upon as antiseptic. Many of the bacteria grow freely on iodoform jelly 1:100. Those which grew abundantly on iodoform jelly grow slightly on oxide of zinc jelly 1:100. Oxide of zinc was considered a better solid antiseptic than iodoform. The author thought that our present knowledge permitted us to associate certain bacterial forms with definite pathological lesions. In conclusion he presented the report of a case of abscess of the face in which he found the micrococcus tetragens. So far as he knew this microorganism had never before been found in phlegmon in man.

DR. WM. H. CARMALT, of New Haven, remarked that there was only one point to which he wished to refer, that was reference to the alleged microbic origin of tumor. A great deal has been said in regard to the microbic origin of cancers and other tumors. He thought that the division of Virchow's class of granulomas into a class of tumors by themselves, known as infectious tumors, is correct. This class includes tubercle, syphilomes, lepra, lupus, actinomycosis and myelitis. These growths should be taken out of the class of tumors and assigned to a class by themselves. He had been unable to convince himself that tumors proper have a bacteriological origin.

DR. N. SENN in concluding the discussion, said that the diseases enumerated in his paper included only those in which the specific cause had been isolated, cultivated outside of the human body, and in which the injection of this culture produce identical lesions. When these three things are done we have furnished positive proof that the disease is due to specific germs. Another class of diseases had been alluded to in the paper in which there was reason to believe from analogy that the affection was due to specific germs, although the three conditions above referred to had not, as yet, been fulfilled. So far no one had been able to show that the supposed bacillus of syphilis was the specific bacillus. That it is a specific disease cannot be doubted; that it is due to a microbe cannot be doubted, but to establish this positively, experimenters must do what Koch did before he announced the specific origin of tuberculosis.

He was firmly convinced from his observations that tumors, in the true sense of the word, were not due to microbes. He had made tumor implantations for many years in animals and in justifiable cases in man, both close to the original seat of disease and at remote points, without obtaining the least evidence of the *microbic origin* of disease.

DR. W. W. KEEN, of Philadelphia, then read a paper entitled

THREE CASES OF BRAIN SURGERY.

The first case was one of removal of a large tumor from the brain; the second trephining for old depressed fracture followed by epilepsy, with removal of underlying brain substance; the third was the removal of the cerebral motor centre for the left wrist and hand for epilepsy. The three patients were presented.

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Abortive Treatment of Gonorrhœa—Mortuary Statistics—Artificial Suppression of Menstruation—Treatment of Retained Placenta—Cataract of Glass-makers.

Dr. Mauriac, in a note on the treatment of gonorrhœa, has summarized his conclusions as follows: 1. The abortive treatment is indicated and has some chance of succeeding in acute gonorrhœa only during the first hours of its outset. 2. All the attempts to cut short an attack of gonorrhœa during its period of progression and when it reaches its height are useless or dangerous, one obtains only delusive cures. 3. The antiseptic practice at once (*d'emblée*), suggested by the mi-

crobian theory of gonorrhœa, has till now produced only delusive results. 4. It is indispensable to submit acute gonorrhœa to an antiphlogistic treatment until the almost complete disappearance of the most inflammatory phenomena. It must proceed to the proper stage of maturity before any repressive medication should be had recourse to. 5. This latter gives decisive and durable results only in the involutive phasis of the specific catarrh. 6. The agents of repressive medication are copaiba and cubebs internally, the sulphate of zinc in injections. 7. The balsam should be given first; it sometimes of itself produces a definitive cure. In the greater number of cases, while continuing its use, astringent injections may be resorted to. 8. The duration of the repressive medication should be short. Should it not soon give the results expected of it, it must be given up and antiphlogistics resorted to. 9. It is by the antiphlogistic medication that the treatment of acute gonorrhœa imperfectly cured should be commenced. These cases which return almost incessantly are seldom or never subdued in a definitive manner.

Every year the Registrar of the Morgue furnishes a report of the number of bodies deposited there, the cause of death, the kind of death, etc. In 1886 the Morgue had received 932 bodies, in 1887 928. The figure 928 is decomposed as follows: Men, 545; women, 172; newborn infants, human débris, 153. In 1886 there were 329 suicides, of which there were 259 men, 170 women; 180 homicides, 60 men, 120 women; 89 accidents, 70 men, 19 women; 74 sudden deaths, 46 men, 28 women; 360 from unknown causes, 300 men, 60 women. In 1887 there were 338 suicides, 265 men, 73 women; 75 homicides, 57 men, 18 women; 90 accidents, 80 men, 10 women; 80 sudden deaths, 50 men, 30 women; 345 from unknown causes, 285 men, 60 women. As regards the kind of death the report gives: Submersions, 398; natural deaths, 70; run over by carriages, 60; railway accidents, 28; other accidents followed by sudden death: 67 falling from a height; 40 from asphyxia; 37 from firearms; 15 from cutting instruments; 20 from poisoning; 8 by hanging; 58 from electric shocks; 5 from homicides by divers arms; 50 from burns; 20 from blows; 20 by criminal abortion; 2 uncertain; 30 from diseases. The month which furnished the greatest number of bodies is the month of May, that which furnished the least is the month of December. As regards suicides, bachelors furnished the largest contingent, then came married persons and, thirdly, widowers.

We do not often hear of the artificial suppression of menstruation being employed as a therapeutic measure. According to a note reproduced in the *Revue Obstétricale et Gynécologique*, Dr. Loewenthal, of Lausanne, relates the history of twenty-three cases in which this measure had

been employed with advantage in chlorosis. The method employed consisted in injections of hot water of the temperature of at least 49° C., with complete rest in bed. In some very rare cases, iced water was employed preferably to hot water. In eighteen cases the remedy was employed for pure chlorosis. The five others comprised two cases of grave hysteria and three of convalescence from exhausting maladies. In these latter the convalescence was shortened. One of the hysterical patients received a marked advantage, and all the chlorotics were cured with surprising rapidity, and without ulterior medication, after from three to five menstrual suppressions. No grave consequences were noted.

In the treatment of retention of the placenta Dr. Pinard, a well-known obstetrician, remarks that it is important, in the first place, to ascertain the condition of the uterus. This may be voluminous, ill-defined, or it may be retracted, consistent. In the first case the retention is caused by inertia, in the second by the premature retraction of the womb. To overcome the inertia of the organ, and to provoke its contractions, Dr. Pinard advises intra-uterine irrigations of very hot water, of a temperature of from 45° to 48° C. They should be practiced with an aseptic liquid and in great abundance (from 3 to 6 litres). After the application of this procedure the author always found the uterus retracted, the placenta detached and expelled. He gives a caution as to the use of the ergot of rye in these cases. Dr. Pinard then studies the retention of the placenta either by the total retraction of the uterus, the maximum of which is at the internal orifice of the cervix, or by the partial retraction of the organ, which then determines the imprisonment of all or a portion of the placenta. This imprisonment may be diagnosed by the hand applied to the abdominal parietes. When the retraction is total the uterus may be felt with its normal form, and when it is incomplete the organ will appear hard, ligneous, but of an irregular form. Authors are divided as to what should be done in such a case. Dr. Pinard is in favor of direct intervention.

In a note in the *Petit Journal de la Santé* on the cataract of glass-makers, the author remarks that a German physician found that of 442 glass-makers aged less than 40, there were 42; that is to say, 9.5 per cent., affected with the commencement of cataract; and of 64 glass-makers aged more than 40 years he found 17, that is, 26.5 per cent., affected with the same malady. This proportion is far above the average. In order to account for the cause of this singular predisposition the author made some researches, and came to the conclusion that the trouble of the crystalline lens is due, on the one hand, to the direct action of the intense heat on the eye, particularly the left eye, which is the most frequently affected; on the other hand, the enormous loss of water caused by

the excessive perspiration under the influence of the heat. It is by this excessive loss of water that may be explained the production of cataract in diabetic subjects.

A. B.

DOMESTIC CORRESPONDENCE.

Surgical Instruments and Case.

Dear Sir:—In surgery, the spirit of the times is simplicity with efficiency. Economy in means as well as time the busy practitioner desires, when efficiency is not destroyed by this economy. Instruments to be used by the general practitioner must be neat, practical, easy to comprehend, and constructed with a special consideration for aseptic

sis, the surgeon's bane. These conditions must be observed, and these attributes must be obtained, if the work of the surgeon is crowned with success.

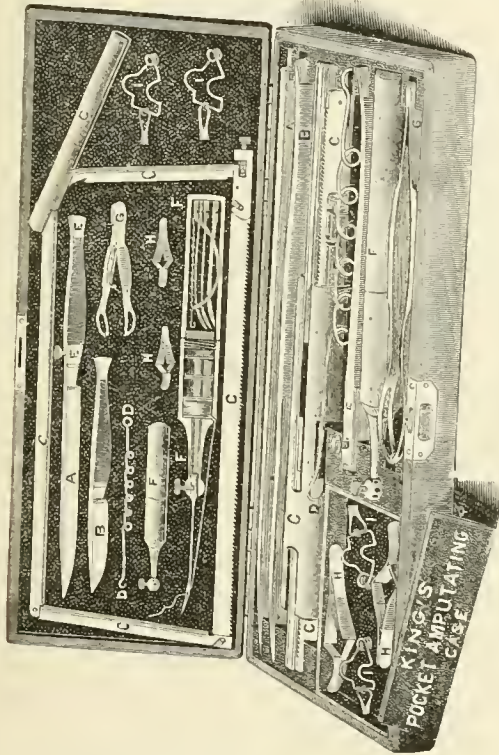
I wish to call the attention of the profession to a little amputating case, so complete in all its appointments and so efficient in the work of minor surgery as to make its possession very desirable. This is a compact case, (made by J. LaF. King, of this city), 7 x 3 x 1 inches, can be carried in the pocket, and yet it contains 2 amputating knives, 1 Liston blade 7½ inches long, with adjustable handles, 1 short knife for circular operations, 1 Hamilton bulldog forceps, 4 artery clamps, 2 serrasfins, 1 folding saw frame and handle, adjustable to any angle, 2 6½ inch saw blades, which can be arranged in handles either for amputation or resection, 1 suture carrier and needle holder, which is the crowning feature of the case. This needle carrier is arranged for wire, gut or silk. A number of sutures can be made with it, some new stitches peculiar to the device not heretofore made, the inventor introduces with the needle. It makes the continuous suture, lock stitch with parallel thread on both sides of wound, a chain stitch, parallel thread on both sides, over and over stitch, ball and glove stitch; but the most important is the interrupted self-limiting suture, a most perfect knot that does not slip, holding the first tie just where you place it, tight or loose, until final knot is made. The carrier is 4½ inches long, with hollow handle for needles and wire, and chambers for three bobbins, carrying about forty yards of silk. The needles have various curves, prick point, cutting edges, and adjustable by screws to any angle, and the whole case is constructed with special aseptic features.

Its compactness, its wide scope of usefulness, its novelty and efficiency, are worthy the surgeon's attention, while the genius displayed in the device of saw handle and needle carrier makes it useful for so many purposes, and the moderate price asked for it by the inventor makes it desirable to possess it.

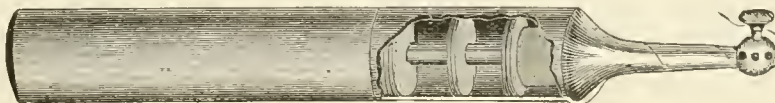
The manufacturer has kindly furnished me cuts of the case and needle carrier that better illustrate the instruments than a mere wordy description.

B. M. GRIFFITH, M.D.

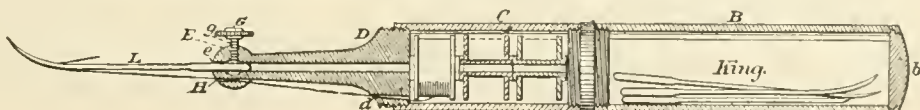
Springfield, Ill., Sept, 10, 1888.



Above cut represents instruments nested in case, and same instruments lettered adjusted on cover. Case is 7 x 3 x 1 inches, full morocco, velvet lined.



Carrier, Bobbins exposed. Holes in head show directions needles can be used.



"The Ethics of Marriage."

Dear Sir:—Dr. Ingersoll, in *THE JOURNAL* of Sept. 22, referring to your editorial on "The Ethics of Marriage" (See *JOURNAL*, Sept. 1, 1888), corrects the statement that "New Mexico, New Jersey, South Carolina, Texas, and the District of Columbia, have no laws relating to the punishment of attempts to perform abortion," so far as the same applies to New Jersey. Now, sir, to prove to you that Texas is not entirely oblivious to matters of protection of the health of her inhabitants, and is not lagging in the race of her sister States in regard to the "stringency of her laws," the records of our State courts show that the violator gets a taste of Texas justice.

In confirmation of the above, I beg leave to refer you to the following Articles of the Criminal Laws of Texas, viz.:

Art. 536.—"If any person shall administer to a pregnant woman, with her consent, any drug or medicine, or shall use toward her any violence, or any means whatever, externally or internally applied, and shall thereby procure an abortion, he shall be punished by confinement in the penitentiary not less than two, nor more than five years; if it be done without her consent the punishment shall be doubled."

Art. 537.—"Any person who furnishes the means for procuring an abortion, knowing the purpose intended, is guilty as an accomplice."

Art. 538.—"If the means used fail to procure an abortion, the offender is nevertheless guilty of an attempt to procure an abortion, provided it be shown that such means were calculated to produce that result, and shall be punished by fine not less than one hundred, nor more than one thousand dollars."

Art. 539.—"If the death of the mother be occasioned by an abortion so produced, or by an attempt to effect the same, it is murder."

Thus, Mr. Editor, you will see that Texas, also, does not "wink" at that "too frequent crime." In justice to the name of our great State, you will please give the above a place in *THE JOURNAL*.

W. W. REEVES, M.D.

Wills Point, Texas, Sept. 28, 1888.

Dr. Ord and the "Family Doctor."

Dear Sir:—In common professional courtesy I cannot allow the remarks of your occasional correspondent (London Letter, *JOURNAL*, Sept. 22) on Dr. Ord to pass without comment. Dr. Ord is a man whose work and worth are universally recognized, and a life-long devotion to the highest interests of the profession should, in reputable journals at least, protect him from baseless attacks.

The article in question, in the "Family Doctor," bears internal evidence of composition by some

one who had obtained such general and specific information as is readily available about prominent physicians, but the ignorance of the writer and the lack of intimate personal knowledge are shown by the fact that Dr. Ord's address is given at a house from which he had moved several years ago!

During his stay in this country last year Dr. Ord was ill, and had indeed reasons of an acutely personal nature for not attending the meetings of the Medical Section of the Congress.

Yours very truly,

WM. OSLER, M.D.

1502 Walnut St., Phila., Sept. 29, 1888.

BOOK REVIEWS.

THE BEST SURGICAL DRESSING. How to prepare it and how to use it. With a consideration of BEACH'S PRINCIPLE OF BULLET-WOUND TREATMENT. By OTIS K. NEWELL, M.D., etc. Sm. 8vo, pp. 170. Boston: Cupples and Hurd. Chicago: W. T. Keener.

After a short introduction in regard to the use of iodoform in surgery, Dr. Newell gives a translation of Miculicz's paper on the "Use of Iodoform in Surgery," which appeared in the *Wiener Klinik* in 1882. Most American readers are probably familiar with the general conclusions of Miculicz, though this is the first time, we believe, that the paper has appeared in full in English. In the six years since Miculicz wrote his paper, iodoform has found its legitimate place in surgery, and there are few that will now deny its value.

The second part of the book deals with Beach's principle of bullet-wound treatment. Surgeons are pretty well agreed as to the proper treatment of bullet-wounds of the chest and abdomen. But in other cases, says Dr. Newell, they seem, as a rule, to disregard the following principle of bullet-wound treatment: "Never disturb a bullet-wound unless there are positive indications of the necessity of so doing." Or in the words of Roswell Park: "The injury which a bullet may inflict is done by it as it passes in its courses; any subsequent harm usually comes from unwarranted interference." The ball, on account of the heat generated by its passage out of the weapon and through the air, may easily enter the body in an aseptic condition, and when thus imbedded in the tissues may be an innocuous and inoffensive substance. In a general way it may be said that probing for a bullet under these conditions, or at all when one is not prepared to operate, is not good surgery. This expresses, in a general way, what Dr. Newell calls Dr. Beach's principle of bullet-wound treat-

ment. A number of illustrative cases are given to show the practical working of the principle in practice.

MISCELLANEOUS.

NEW EDITION.—J. B. Lippincott Company, Philadelphia, announces that a new edition of the *United States Dispensatory* is now being bound, and will be ready in a few days. The revision has been thorough, and not merely the addition of a supplement. More than one third of the book, or nearly eight hundred pages, is entirely new matter, while the whole work has been most carefully rewritten. The National Formulary has been incorporated.

CLINICO-PATHOLOGICAL SOCIETY, OF WASHINGTON, D. C.—The officers of the Clinico-Pathological Society of Washington, D. C., which was organized in the early part of last winter, are as follows:

President, G. W. Johnston, M.D.
1st Vice-President, H. L. E. Johnson, M.D.
2d Vice-President, H. B. Deale, M.D.
Treasurer, C. W. Richardson, M.D.
Secretary, D. K. Shute, M.D.

A SANITARY CONVENTION will be held at Hastings, Mich., under the auspices of the State Board of Health, on Monday and Tuesday, December 3 and 4, 1888.

There will be sessions the first day at 2:30 P.M. and 7:30 P.M.; on the second day at 10 A.M., 2 P.M., and 7:30 P.M. Standard time. At each session of the Convention there will be addresses or papers on subjects of general interest pertaining to public health, each paper to be followed by a discussion of the subject treated.

Officers of the Convention.—President, Hon. D. R. Cook.

Vice Presidents.—Hon. Clement Smith, Hastings; William H. Young, M.D., Nashville; S. C. Rich, M.D., Middleville; Eugene Davenport, Woodland; Norman Latham, Baltimore; H. F. Peckham, M.D., Freeport; A. C. Towne, Milo; Prof. J. W. Roberts, Hastings.

Secretary, A. E. Kenaston, Hastings.

The admission to all sessions of this Convention will be free, and the ladies are cordially and especially invited. The invitation is especially extended to health officers to be present and take part in the discussions.

The objects of the Convention are the presentation of fact, the comparison of views, and the discussion of methods relating to the prevention of sickness and deaths, and the improvement of the conditions of living. This is not a doctor's Convention, but it is for the people generally.

Addresses and Subjects to be Presented and Discussed.—Brief statement of objects of Convention, by Hon. John Avery, President of State Board of Health.

Address by the President of the Convention, Hon. D. R. Cook.

Among the subjects which it is expected will be presented and discussed are the following:

1. The Water-supply of Hastings.
2. Plats of Localities in Hastings.
3. Disposal of Excreta and Waste in Hastings.
4. Ventilation and Heating.
5. Prevention of Communicable Diseases.
6. The Germ Army—how it may be Routed.
7. Duties of the Local Health Officer.
8. School Hygiene.
9. Prevention of Insanity.
10. Prevention of the Diseases of the Eye and Ear.
11. Food and its Adulterations.

12. Degenerations of Age.

13. An Address by Prof. Vaughan, of the University. Authors of papers are requested to limit them to twenty minutes. The speakers who lead the discussions are to be allowed ten minutes each, all others five minutes.

The papers are expected to be original contributions, which, when read, are to be considered the property of the Convention, and to be left with the Secretary. Programmes will be issued before the Convention.

Committee from the State Board of Health.—Henry B. Baker, M.D., Lansing.

Local Committee.—Hon. Daniel Striker, Chairman; Hon. Jas. L. Wilkins, Mayor of the City; Dr. D. E. Fuller, City physician; W. L. Wilkins; Dr. A. P. Drake; C. W. Warner, City recorder, Sec. of Committee.

Committee on Finance.—John Bessmer, Dr. Wm. H. Snyder, M. L. Cook.

For further information address A. E. Kenaston, Sec'y., Hastings, Mich.

THE AIR OF COAL MINES.—MR. T. G. NASMYTH, in a report to the Scientific Grants Committee on "The Air of Coal Mines," draws the following conclusions:

From comparison of the state of air in coal mines with that in one-room houses, schools naturally ventilated, and manufactories, it will be admitted that it is wonderfully good. The problem of mine ventilation is a difficult one, but by the use of fans it has been solved to a certain and large extent. It would not be easy, if possible, to ensure that the air of mines would be as pure as the air above ground, as so many causes are coöperating to vitiate mine air—respiration and excretions of men and horses; combustion of powder, oil, and tallow; the exudation of gases peculiar to the various minerals met with in mines; and the decomposition of wood. To keep the products of all these in moderation a large and ever-moving volume of air must pass in and out of the mine. The sectional area of the air shaft would have to be much larger than present uses demand if the impurities were to be reduced to the quantity found in pure air, but the present system might, in my mind, be much improved by attention to some points which have struck me in the present inquiry, and which I now venture to suggest to those concerned.

The miner spends about one-third of each day in the mine, and we may assume that about one-third of his excreta pass into the mine, and there remain as a source of pollution for an indefinite time. Horses are at all times in the mine, and their excreta are constantly polluting the air, and this cannot even partially be avoided. The evil produced by the former might be diminished by the use of some form of earth closet, small coal or coal dust taking the place of earth. The receptacles could be removed daily or weekly, according to circumstances. This proposal may not strike a coal owner or manager as being practicable, but it is very simple and to a certain extent it would diminish the difficulties and the cost of ventilation. As regards pollution by horses, it is not convenient always to have stables in the upcast shaft, but for the sake of the air they should be; for the sake of the horses the stables are better in the downcast, as where the stables are in the upcast pit experience proves that they do not live so long as in the downcast. Wherever the stables are, means should be taken to purify them; impermeable floors which can be washed out with water, lime-washed walls, and careful attention to daily cleaning out of litter, would all help the problem of ventilation.

Natural means should assist artificial; thus, if the mouth of the upcast shaft were bell-shaped, and by a weather-cock arrangement made so as not to face the wind, its aspirating action would assist the fan instead of rather opposing it, as it does with the present system; and in the case of the downcast a sail or brattice might be so arranged as to promote the down current. Further,

in the case of the downcast, all sources of vitiation should be removed from near its mouth, such as tar, oil, paraffin, etc., and there should be no chance of currents passing from the furnace holes down the shaft.

The Work of the Miner and its Effects.—Twenty years ago air was very bad in mines; ventilation was almost unknown, and the hours were very long. Nowadays the air is generally good; ventilation is efficiently carried on, and hours of work are short. The miner works hard whilst at his work, but he has short hours and many holidays. In the tables of statistics I have shown that phthisis, contrary to general opinion, is not a common disease amongst miners; and my own everyday experience for ten years in a large mining population supports those tables. In fact, I know of no disease peculiar to miners, or any disease in excess existing among miners. I have also consulted many other medical men practicing amongst colliers, and their opinion coincides with my own. In conclusion, I have to state, as my belief, that the conditions connected with miners' occupation are as favorable to health as those in the occupation of any other workmen, and this opinion is borne out by the vital statistics quoted.—*Brit. Med. Journ.*, Aug. 4, 1888.

LIKE AN ALARM OF FIRE.—The head of the Health Department of New York City has some very clear notions in regard to the great need for alertness in the management of infectious diseases. He has had occasion lately to write officially as to the imminence of yellow fever. From his letter we quote a paragraph which shows its author's confidence that this department is thoroughly equipped and disciplined. After remarking that yellow fever is not to be dreaded this year at our northern cities, he says, "If the fever should occur, however, it would be in isolated cases, with which we are prepared to deal so promptly and effectually that it will have no chance to spread. The machinery of the contagious diseases division of this department is in such condition that it can be set in motion at a moment's notice, and I am confident that the response of this department to a notice of known or suspected disease of a dangerous character would be *like that of the fire department to an alarm*. With special reference to yellow fever, we have a medical inspector constantly on duty at our headquarters. Within five minutes after receiving a report he would be on his way to inspect it, within thirty minutes we should have his report, and immediately an ambulance and the disinfectors' wagon would be despatched to the place. In an hour we should have the patient on his way to the hospital at North Brother Island."

When we reflect how much panic and harm often arise from a lack of preparation for such visitations, it is very gratifying and reassuring to read that a health official compares the readiness and discipline of his department with those of the model fire departments of our large cities, where everything is in motion at the touch of a bell.—*Medical News*, Sept. 1, 1888.

MEDICAL SOCIETIES IN KANSAS.—The *Kansas City Medical Record* in a recent editorial under the above caption says: A formidably harmonious county medical society, well attended and doing good work, will demoralize any incompetent opposition. The Kansas profession, we are pleased to note, are beginning to understand the situation, and societies are being formed in many parts of the State; good work is already inaugurated in these new societies, and with a united effort the State will be handsomely redeemed.

THE TRI-STATE MEDICAL ASSOCIATION of Mississippi, Arkansas, and Tennessee will meet in Memphis, November 13—the second Tuesday in the month.

CHOLERA has very nearly ceased in Cashmere, India, but it prevails still in many parts of the country, though not to any great extent.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from September 22, 1888, to September 28, 1888.

By direction of the President Major George M. Sternberg, Surgeon U. S. Army, will proceed to Decatur, Ala., and to such other points in the infected districts of the Southern States as he may deem necessary, to continue his scientific investigations of yellow fever. Par. 8, S. O. 224, A. G. O., Washington, September 26, 1888.

Under authority from Hdqrs. of the Army, A. G. O., dated September 22, 1888, Major Charles B. Throckmorton, and batteries "K and M," Second Artillery, comprising the garrison of Jackson Bks., New Orleans, La., will proceed at once, by sea, to New York Harbor, and upon arrival there will take post at Ft. Wadsworth, New York Harbor. A small guard of enlisted men will be left at Jackson Bks. Major John W. Williams, Surgeon, will accompany the troops to New York Harbor; Major Harvey E. Brown, Surgeon, will remain at Jackson Bks. Par. 12, S. O. 202, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, September 26, 1888.

Major Robert H. White, Surgeon U. S. Army, is granted leave of absence for one month, with permission to apply for an extension of one month. Par. 7, S. O. 199, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, September 22, 1888.

By direction of the acting Secretary of War, leave of absence for six months on surgeon's certificate of disability, with permission to leave the Div. of the Missouri, is granted to Capt. Ezra Woodruff, Asst. Surgeon. Par. 5, S. O. 223, A. G. O., Sept. 25, 1888.

By direction of the acting Secretary of War, Capt. Washington Matthews, Asst. Surgeon, is detailed as a member of the Army Medical Examining Board appointed to meet in New York City October 1, 1888, by S. O. 203, September 1, 1888, from this office, vice Major George M. Sternberg, Surgeon, hereby relieved from his detail as a member of the Board. Par. 3, S. O. 224, A. G. O., Washington, September 26, 1888.

Upon the recommendation of Capt. Daniel Weisel, Asst. Surgeon, senior medical officer camp of instruction of the Fifth Cavalry, Capt. J. Van R. Hoff, Asst. Surgeon, is assigned in charge of active operations of the hospital corps in that camp. Par. 2, S. O. 121, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., September 22, 1888.

By direction of the acting Secretary of War, leave of absence, to include May 3, 1889, is granted Capt. George F. Wilson, Asst. Surgeon. Par. 14, S. O. 223, A. G. O., September 25, 1888.

The resignation of Capt. George F. Wilson, Asst. Surgeon, has been accepted by the President, to take effect May 31, 1889. Par. 15, S. O. 223, A. G. O., September 25, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending September 29, 1888.

Medical Inspector Adrian Hudson, ordered for examination preliminary to promotion to Medical Director.

Medical Inspector Newton L. Bates, ordered for examination preliminary to promotion to Medical Director.

Surgeon George H. Cooke, ordered for examination preliminary to promotion as Medical Inspector.

Medical Inspector Michael Bradley, ordered as member of Naval Examining Board.

Medical Inspector Henry M. Wells, relieved from duty as member of Naval Examining Board.

Surgeon Manly H. Simons, ordered to Widow's Island Naval Hospital.

P. A. Surgeon A. C. Heffenger, detached from naval hospital, Widow's Island, and wait orders.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, OCTOBER 13, 1888.

No. 15.

ORIGINAL ARTICLES.

SOME OBSERVATIONS CONCERNING THE EXTRACTION OF CATARACT WITH- OUT AN IRIDECTOMY, AND THE USE OF THE BANDAGE IN THE AFTER-TREATMENT.

Read in the Section on Ophthalmology at the Thirty-ninth Annual Meeting of the American Medical Association, May 9, 1888.

BY GEO. E. FROTHINGHAM, M.D.,

PROFESSOR OF OPHTHALMOLOGY IN THE UNIVERSITY OF MICHIGAN.

The question as to which is the best method of extracting senile cataract has lately been considerably discussed, and a return to the old flap operation, in all its essential features, has been advocated and carried into practice by several ophthalmic surgeons. Professor Schweigger has even abandoned the use of the narrow knife, and has substituted one very nearly of the same form as the one first used by Joseph Barth, the founder of the Vienna School of Ophthalmology, and adopted by Beer and commonly known as Beer's knife. In this respect Schweigger has returned to the practice of the great founder of modern ophthalmology, instituted over a hundred years ago. By this movement the cycle has been completed and we find ourselves at the point of departure. Movement does not always mean advance, however, and I believe that not only this return to the wide knife, but also the attempt to extract any cataract, hard or pasty, without an iridectomy, is a backward movement that a proper consideration of past experience should deter us from making.

To me the matter has been one of considerable interest, for, so far as I know, I was the first to devise the upward extraction without an iridectomy and using a narrow knife, as has lately been advocated by several operators. I published an account of this operation fourteen years ago, and claimed for it advantages that a more extensive experience proved to be unfounded. I soon abandoned it, I confess, not a little chagrined at having claimed such advantages for it, without a more prolonged trial and analysis of results.

When I first began to operate for cataract, about twenty years ago, von Graefe's extraction, devised but a few years before, had been almost universally

adopted both in Europe and this country. I knew of but one operator of note who still adhered to the flap extraction. I began to operate by making the flap extraction, but I soon abandoned the use of the wide knife, making the flap with a Graefe's knife and performing an iridectomy only when the iris offered unusual obstruction, or was injured in some way. I was induced to adopt this older method by a consideration of the danger that seemed to me inherent to the extreme peripheral incision advocated by von Graefe, and practiced by him and his followers everywhere at that time. This incision approached so near to the ciliary body that it seemed to me a dangerous position to inflict a wound; and, indeed, a few cases of cyclitis, ultimately involving the other eye, and seemingly due to the peripheral position of the incision, had already been reported. Besides this, the excision of the iris seemed like an unnecessary mutilation, and served to add to the traumatism from which the eye must suffer in the extraction. It seemed to me unwarrantable to incur these dangers, unless the operation could be shown to possess elements of safety that more than made up for these obvious disadvantages. Statistics had not then accumulated, as they have since, to substantiate the claims of Graefe's operation. But notwithstanding this, it was rapidly adopted through the magic influence of his justly celebrated name.

Probably the ease with which his incision is made, and the facility with which the lens can be extracted by his method, were not the least of the inducements that led to its rapid substitution for the more difficult flap extraction. It must be borne in mind that in the old flap extraction the incision was made with a wide triangular knife, known as Beer's knife. It required the greatest care and skill to complete this incision without allowing an escape of the aqueous fluid, and entanglement of the knife in the iris and various other complications that I need not mention now. Indeed, so much practice and skill was necessary to complete the incision in a suitable manner that surgeons generally hesitated to perform it, and quite generally operated for cataract by couching or displacement, long after that operation had been condemned by specialists as decided malpractice. One has only to read the statements found

at this period in any standard work on surgery, to see how formidable the operation seemed to them.¹ I remember now the many hours I spent in executing it upon the cadaver, and upon animals, before I attempted to make it upon a patient.

The flap when properly made, however, by reason of its large size, and lying in the cornea, just anterior to the sclero-corneal junction, allowed of a rotation of the lens upon its axis and passage through the pupil into the anterior chamber, from which it could generally be extracted without mutilating the iris. When a cure was effected, without accidental complication, there existed a central, movable pupil, and to the ordinary observer the eye seemed perfectly natural. Even on close inspection it revealed the absence of the lens only by the deep anterior chamber and tremulous condition of the iris. Indeed, its successful results were models of perfection. It was the ideal operation. Why was it abandoned? Besides the large number of cases lost by suppuration of the cornea, prolapse of the iris, and occlusion of the pupil, there were several reasons which were more or less important, that I shall not mention in detail here. The result from all these causes was that, even with the greatest operative skill that could be acquired, and the closest attention to after-treatment that could be bestowed, failure occurred so often that thoughtful operators sought for some method by which the dangers and failures might be lessened. The perfect results by this method were all that could be hoped for, and if "perfect results for the few" had been von Graefe's motto, he would never have proposed as a substitute the operation that bears his name. But, regarding "sufficient sight for the greatest number" as the prime object to be sought, he made the change, and soon reduced the number of failures to about one-third what they had formerly been, and complete successes he raised from 80 per cent. to 90 per cent.

Influenced by the considerations I mentioned at the beginning, I adhered to the flap operation until statistics, sufficiently extensive, should demonstrate the superiority of Graefe's extraction. Before this seemed to me established, Liebreich published his method of downward extraction, which he claimed to be as easy of execution as couching, as safe as Graefe's method, and as perfect in result as the flap extraction.

His operation was performed downward, the incision being made with a narrow Graefe's knife, the puncture and counter-puncture being about 1 millimetre external to the clear margin of the cornea, and a little below the horizontal meridian. From these points it was carried downward in a curved direction and terminated at a point about 2 millimetres above the lower margin of the cornea. Influenced by the claims thus made by so

distinguished an author, I tried it in several cases soon after his publication appeared. I was greatly disappointed, however, by finding, at the start, that the operation, contrary to his claim, was difficult in execution, for, by reason of the anterior position of the apex of the flap, I found it even more difficult to evacuate the lens without resorting to traction than in the flap operation, in which the incision was made more peripheral, and allowed of more ready escape of the lens under the influence of gentle pressure. Besides, Liebreich's method had the fault of downward extractions generally, and in case iridectomy became necessary the coloboma would be uncovered by the lid.²

From a consideration of this and other operations I devised an upward extraction somewhat similar to Liebreich's, but having the apex nearer to the sclero-corneal junction, only one millimetre or less inside of it, the puncture and counter-puncture being at about the same distance behind the margin of the clear portion of the cornea as in his operation. After making this operation a few times, I published a description of it in the Transactions of the Michigan State Medical Society for 1874, (page 237 *et. seq.*), and claimed for it superiority over other methods then practiced. From that report I quote the following: "The operation as I have performed it is made thus: the patient, having been chloroformed, a stop speculum is introduced and the eye fixed as in modified linear extractions. With a Graefe's knife the puncture is then made in the sclera, about a half a line from the margin of the cornea, and about a line, or a line and a quarter, below a tangent to the upper edge of the cornea; the counter-puncture is made in a corresponding position on the opposite side, and a flap is then carved out so that its upper edge shall be about half a line within the corneal margin. The capsule is then lacerated, and the other steps of the operation are the same as in flap extraction.

"The advantages of this method are:

"First, ease of execution:

"Second, as great safety from corneal suppuration as in the modified linear extraction.

"Third, as perfect results as by the flap extraction.

"Fourth, in case any accident requires an iridectomy, the coloboma will be covered by the upper lid, and thus the least inconvenience result."³

But I soon found it necessary to modify this operation very materially. I carried the apex of the incision farther backward, close, to the sclero-corneal junction, or even a little within, but still farther forward than Graefe originally recommended. I then made an iridectomy in all cases.

¹ See Gross' System of Surgery, fifth edition, vol. ii. p. 329; also W. Lawrence, Treatise on Diseases of the Eye, p. 430, edition of 1833.

² He suggested that it could be made upward, but it does not appear that he ever attempted it.

³ Transactions of Mich. State Med. Soc. 1874, p. 240.

I was driven to these changes by the accidents and difficulties inherent to any extraction in which the incision is not as peripheral as consistent with safety to the ciliary body, and these will require an iridectomy for the easy and safe evacuation of the lens, and greatest freedom from complications during the after-treatment. Unless the incision is, at the apex, well forward, and the flap large, there will be very great difficulty in rotating the lens forward so that it will pass through the pupil into the anterior chamber before it engages in the wound. If it does not do so, the iris is pressed before it as it engages in the opening, and, overlapping it, holds it as a hood and prevents its evacuation without dangerous pressure, and then only by stretching and bruising the iris in a manner that would greatly endanger inflammatory reaction. Any attempt to draw the iris backward over the edge of the lens, and replace it within the globe behind it, would hardly diminish the injury to the iris itself, and would be very liable to lead to rupture of the zonula of Zinn and escape of vitreous. Indeed, it has been said that Graefe was led to perform iridectomy, not merely to facilitate the escape of the lens, but because he had noticed that the most severe and destructive forms of iritis that occurred after extraction by the old method, had their starting point from this bruised and stretched portion of the iris. Infection would certainly be more likely to follow the replacement of the iris after such an exposure to conjunctival secretions, and this would be best avoided by excision.

An analysis of the next sixty cases operated upon by me, by this method, after publishing the description and making the claims above quoted, showed that iridectomy had to be performed in eight cases to avoid excessive bruising and stretching of the iris, or such prolonged and excessive pressure to evacuate the lens as greatly to endanger prolapse of vitreous humor. Even then prolapse of vitreous occurred seven times (equal to $11\frac{2}{3}$ per cent.).⁴ There were three cases of suppurative iritis resulting in reopening of the wound, suppuration of the cornea and loss of the eye, and one case of suppuration of the cornea beginning in the wound, and also resulting in loss of the eye. Prolapse of the iris occurred eight times complicating the recovery, though none led to immediate loss of the eye. There were fifty-one good results (85 per cent.), five partial successes ($8\frac{1}{3}$ per cent.), and four total failures ($6\frac{2}{3}$ per cent.) Cases in which the vision was $\frac{1}{10}$ or above, were counted as good results.

To be brief, I found the operation without iridectomy, tedious, and more likely to be at-

tended with prolapse of the vitreous than when iridectomy was made, and this I believe will be the experience of other operators. In twenty-four cases of uncomplicated hard cataract, operated upon by this method and reported by Dr. Chas. S. Bull, prolapse of the vitreous occurred three times, and the lens had to be removed by a traction instrument.⁵ This indicates something wrong with the operation itself, for prolapse of the vitreous need occur but seldom in extraction with iridectomy. It does not occur, on an average, in more than 3 per cent. of my cases now. Again, lens matter was more often left in the eye, not only behind the iris, but scraped off by the protruding sharp upper lip of the wound, it became packed into Fontana's space, from which position it was very difficult, and sometimes impracticable to dislodge it. Iritis and occlusion of the pupil occurred with greater frequency than it has since in my practice, and the dense plug, formed by the remains of lens matter and iritic effusion, constituted some of the most difficult cases to relieve by secondary operation. Schweigger confesses that more than 50 per cent. of all his cases heal with posterior synechia. (*Archives of Ophthal.*, December, 1887, p. 453.) One frequent source of danger and annoyance, namely prolapse of the iris, seemed to me almost certainly avoidable by the performance of an iridectomy. This occurred in one of my cases five days, and, in another, four days after the operation, and to patients who had kept reasonably quiet.

In the cases already reported, I notice a repetition of my experience. In forty-eight cases collected in Boston, by Dr. Derby, in which this operation has recently been made by skilled operators, prolapse occurred in twelve cases, or one in four. In one of these it occurred without cause in a docile patient four days after operation.⁶ Schweigger in his report of his first ten cases operated upon by this method, cites one case of prolapse of the iris in the whole length of the wound. This equals 10 per cent. He expresses the hope that this per cent. may be lessened in future cases. (See *Archives of Ophthalmology*, December, 1887, p. 451 and 452.)

This danger I believe cannot be wholly, or even largely, guarded against by the use of myotics. A year ago I was performing an extraction under cocaine upon a female patient who seemed to have the usual fortitude until the operation had been begun and the incision made. She then became unmanageable, and so strained the ocular muscles that vitreous began to escape quite freely before I had begun the iridectomy. I immediately introduced a sharp hook, and with its back pushed the iris backward over the equator of the lens and burying its sharp point in the nucleus below the

⁴This experience is not exceptional as may be inferred from the report of two operations by Schweigger, in both of which an iridectomy became necessary, and in one vitreous escaped, and in the other the soft lens matter had to be removed with the scoop. See *Archives of Ophthalmology*, December, 1887, pp. 452 and 453.

⁵Transactions American Ophthal. Soc., 1887. Cases I, 11, 13, of table following page 418.

⁶Boston Medical and Surgical Journ., Feb. 23, 1888, p. 189.

centre, drew the lens, together with its capsule, from the eye. The iris did not then prolapse, but resumed its normal position, the pupil contracting as usual when the aqueous chamber has been emptied. Performing the toilet of the wound, I instilled a solution of sulphate of eserine (2 grains to the ounce), and applied the bandage. Eserine was instilled regularly and all seemed to be going on well when, on the fourth day, without undue exertion on the part of the patient, a sudden pain occurred in the eye, and on examination the wound was found to have reopened and the iris was prolapsing. This case recovered only after a prolonged convalescence, and several operations, and then with a pupil drawn upward toward the wound. The effect of mydriatics, I believe, is too transient to maintain contraction of the pupil without too frequent instillations, and injurious meddling with a eye after operation for cataract. Besides, it is not rational to expect them to contract the pupil powerfully enough to resist the outward gush of aqueous humor which tends to carry the iris through the wound when it is suddenly broken open by the intraocular pressure.

I need not dwell upon the gravity of this annoying and dangerous accident. It is in most cases only remedied by resorting to a severe operation before the eye has recovered from the traumatism of the extraction, and recovery is generally tardy and often incomplete. Prolonged irritation may ensue, and cyclitis follow, with ultimate destruction not only of the eye operated upon, but the other through sympathy. My experience with this troublesome complication led me to bring the apex of my incision just at the sclero-corneal junction, and thus avoid so large a flap, and also to make an iridectomy in all cases, as a preliminary step to evacuation of the lens. At first I sought to remove as little of the iris as possible, thinking this would allow of easy evacuation of the lens during operation and also of an unobstructed escape of aqueous in case of a sudden reopening of the wound, and thus avoid the extensive prolapse of the iris that would result when it is left entire. In such a case the iris forms a sac, holding the aqueous and acting as a dilator to separate the lips of the wound, often to the utmost extent. I found, however, that when the iridectomy was small the iris still offered some obstruction to the escape of the lens, necessitating a larger flap than would otherwise be needed, and also that an occasional prolapse of the iris at the angles of the wound would occur during the after-treatment. Though these were not so dangerous as the extensive prolapses that often occurred when no iridectomy was made, they still constituted a not very infrequent and quite troublesome complication. These accidents led me to enlarge my iridectomy and I now always aim to remove a large section of the iris. While but a small portion of the pupillary border is cut away,

I seek to remove a large portion of the periphery, in fact, nearly all of that portion that lies behind the incision. The iridectomy thus made is as large as we would attempt for the relief of glaucoma.

I am aware that many operators severely criticise such an iridectomy, and I think of but one distinguished ophthalmologist who professes to practice it.⁷

I have found this large iridectomy not only a safeguard against prolapse, but also against those glaucomatous attacks so painful and dangerous at times during a late attack of iritis following extraction without an iridectomy, or when only a small iridectomy has been made. A large iridectomy also allows of a safer extraction, and a more complete evacuation of soft lens matter, and that, too, with a smaller flap than would otherwise be required. The danger of suppuration of the cornea is thus greatly lessened. The coloboma, in an upward extraction, is so largely covered by the upper lid as to give rise to very little visual disturbance.

In the after-treatment of cataract extractions I deem the application of a bandage covering both eyes, a very important measure. Properly applied, it helps to ensure the healing of the wound, and lessens the dangers of internal inflammations also.

The bandage should be applied in such a way as to exercise gentle pressure upon the orbital portion of the orbicularis muscle. By means of absorbing cotton, properly packed into the depressions about the globe, it serves also to exercise some pressure about it in such a way as to maintain the convexity of the cornea, and more complete coaptation of the flap. This, by some, may be thought a fanciful measure, but it is rational practice, in my opinion. Slight pressure, not uncomfortable in degree, often serves to prevent that troublesome attempt to wink that is annoying to some patients, and which may prove injurious just after an operation. The unoperated eye should be closed and covered with a compress and bandage, as well as the eye operated upon. This, I believe, is of great importance, for, if the unoperated eye is left open, the necessity to wink will exist, and every time the lids of this eye close, there will be a similar, sudden, spasmodic contraction of the orbicularis of the operated eye. This will compress the globe, and must cause a slight motion of the lips of the incision, unfavorable to speedy union. In the case of a fractured bone, such a motion would be regarded as very dangerous to the proper healing process, and bony union might be wholly prevented. It can have only an evil influence upon the healing of the wound after a cataract extraction.

⁷ E. Landolt. See discussion at Ninth International Med. Congress in the American Journal of Ophthalmology, Sept. 1887, p. 261.

If any one will place two or three fingers lightly upon the closed lids of one eye, while the other is left open and winking, they can readily demonstrate the strong contractions of the lid of the closed eye, which take place every time the winking occurs in the eye that is left open. These contractions are strong, and must give rise to a sudden and decided compression of the globe, that cannot occur without producing some motion of the lips of the wound.

Again, if the unoperated eye be open and used, every motion of the ball will be attended with a corresponding motion of the operated eye. This will be likely to cause gaping of the wound and occasional evacuation of aqueous, and perhaps prolapse of the iris also. Even the exposure of the unaffected eye to light acts as an irritant to the other. This is a matter of physiology well known. It would tend to produce inflammatory reaction when it might not otherwise result. If inflammation has already commenced, it would serve to intensify it. In every case of injury, followed by inflammatory reaction, we find the patient complaining that use of his uninjured eye aggravates the pain, if present, in the one injured. Often such an exposure of the well eye is the only exciting cause of pain in the injured one, there being no pain in it when the other eye is not used or exposed to light. These examples are sufficiently numerous to enable us to establish the principle that *when one eye has been subject to severe traumatism, the other should be shielded from light, and use of it, as much as possible, avoided.* More than this, the bandage and thick cushion of cotton serve to protect the eye from accidental blows that may otherwise do harm, and is much easier to remove than plasters generally are.

The patient should be confined in bed. It is here that he can be kept most quiet and his circulation in the best condition to avoid inflammatory affections of the interior of the globe, that are so frequently a cause of failure after an extraction. If an iritis exists we would certainly require confinement to bed. If we could control our patients suffering from any form of iritis, we would confine them all to bed. Our failure to cure the disease, and the prolonged course which many cases pursue, may be justly attributed to the fact that the patient goes about, and is thus exposed to influences that tend to cause relapses and aggravate the disease in all its stages. Why should we court this danger, always liable after cataract extraction, by allowing a patient to be dressed and to go about almost at pleasure, as some propose to do? It has frequently occurred in my practice, that everything has gone on well until the beginning of the second week, when some slight exposure on the part of the patient who is allowed to be up and dressed, has provoked an obstinate iritis. If I could have my way I would keep all imprudent patients in bed, and

under the care of a discreet nurse, for full two weeks after an extraction.

As a result of experience in making over seven hundred extractions, over two hundred of them being flap operations, I have come to the following conclusions:

First. That a narrow, sharp pointed Graefe's knife is the most convenient instrument, with which to make the incision for the extraction of hard, half hard, or pasty cataracts, whether an iridectomy is to be made or not. It is the only knife with which a suitable flap can be made, one with edges in such a form as to remain in proper coaptation under the pressure of the lids.

Second. The incision should not be farther forward than the sclero-corneal junction at the apex, and at the lower angles should be about one and a half millimetres behind it.

Third. A large iridectomy should be made, so as to remove obstruction to the escape of the lens, and avoid the danger of prolapse in the course of recovery.

Fourth. The flap should be as small as possible and yet allow of an evacuation of the lens without undue pressure.

Fifth. Extraction without iridectomy requires a larger flap than would otherwise be necessary, and thus adds to the risk of suppuration of the cornea. It does not allow of so complete evacuation of lens matter. The retained lens matter, together with bruising and stretching of the iris; adds to the danger from iritis following the operation.

Sixth. The dangers of extraction may be greatly lessened by performing a preliminary iridectomy two or three months previous to the removal of the lens.

SECTION OR EXSECTION OF THE RECTUS

IN THE TREATMENT OF PARALYTIC STRABISMUS, AND THAT DUE TO EXTREME OVER-CORRECTION WITH LOSS OF MOTION.

Read in the Section on Ophthalmology at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May 7, 1888.

BY ARTHUR E. PRINCE, M.D.,

OF JACKSONVILLE, ILL.
OPHTHALMIC AND AURAL SURGEON TO THE ILLINOIS STATE INSTITUTIONS FOR THE DEAF AND DUMB AND BLIND.

The purpose of this paper is the presentation of a series of cases of *irrecoverable* loss of power of either rectus, causing extreme paralytic deviation, the restoration of the equilibrium having been accomplished through *section* or *exsection* of the contracted muscle. Such cases are found in one of the four following classes:

1. Permanent atrophy or paralysis.
2. Irrecoverable loss of either rectus through accidental section of the muscle back of its capsular perforation.

3. Extreme over-correction of long standing, following tenotomy with excessive laceration of the capsule, permitting the retraction of the tendon back of the equatorial meridian, whence, owing to atrophy or adhesions it cannot be successfully advanced.

4. Irrecoverable traumatic dislocation of the rectus.

Cases belonging to the paralytic class are not very infrequent. The class of accidental section of the muscle in place of the tendon (formerly very large before the relations of the capsule were understood) is assuming diminished proportion, and new cases are seldom produced except by the most inexperienced charlatan.

The third class is becoming smaller in proportion to the attention paid to the preliminary correction of ametropia, and the frequency with which advancement is employed in the correction of high degrees of squint.

In the fourth class my knowledge is limited to the observation of case 7.

The clinical aspect of these conditions needs no particular consideration. The unpleasant appearance of an extreme deviation, especially when outward or upward and accompanied by restricted motion, is too familiar to be mistaken. The exceptional reference, if any, to be found in the literature of treatment, and the acknowledged incapability of tenotomies and advancements to correct these deformities, justifies the brief outline of the following cases, which have led to the adoption of the present mode of practice.

Case 1.—One of a series of unsatisfactory results, following attempts to correct a paralytic condition, by advancement.

Mrs. D., aged 45. In childhood both interni had been tenotomized in an unknown manner, resulting in a moderate over-correction, which later in life became a divergence of both eyes, measuring together 70° . The interni were so inefficient that the axis of neither eye could be brought parallel to the meridian plane. Lateral motion was restricted to 30° in the right, and 25° in the left eye. The operation performed was a tenotomy of the externi with advancement of the retracted internal recti. The interni were found remotely attached to the posterior hemisphere of the ball, but the advancement was accomplished in a satisfactory manner, and the result was a temporary success. Soon after her discharge a slight divergence (10°) was observed, but in contrast with the gravity of the former condition was not regarded as a bad failure. For three months the divergence increased until it would have been difficult without actual measurement to determine any material improvement.

This failure is introduced as a type of the results which will attend the attempts to restore the equilibrium through advancing a muscle which has remained for many years retracted in the orbit,

becoming atrophic through inactivity. The superior strength of the opposing muscle, though tenotomized, will assert its supremacy and the correction will not be permanent.

Case 2.—*Section of both recti, posterior to their capsular perforation.*¹—Barney Burnes, Sydney, Ill., aged 43. From infancy to the age of 20, he was the subject of a marked internal squint. At that time his father entertained a guest over night who made it his business to travel the country and straighten cross-eyes. It was considered a rare fortune thus accidentally to have presented an opportunity which might never occur again, for they were very poor, and he was willing to straighten both eyes for his lodging and \$2.50. A week later, when Dr. Strabotomist was pursuing his calling many miles away, it was considered safe to expose the eyes to the light, when the following condition was revealed.

Both eyes were deviated extremely outward, measuring with Snellen and Landolt's method,² 50° in the right eye, of which a portion of the iris was concealed under the external canthus and the lateral motion limited to 10° . With H.=I. 5 D. corrected, V.= $\frac{2}{3}$. In the case of the left eye external deviation was 40° , lateral motion 15° , H.=I. 5 D., V.= $\frac{2}{3}$. Direct vision was very imperfect, but by turning the head to bring objects in the visual axis of either eye he could see tolerably well. As he was very anxious to have an effort made for the correction of his deformity and bearing in mind my experience with advancement in this class of cases, it was explained to him that his muscles had been divided too far back, to correct which, as bad an operation would be attempted on the external muscles, as his \$2.50 operation had been on the internal muscles, and that it was hoped by the aid of a stitch to be able to effect a parallelism, so that he would look well and have direct vision, but he must not expect to have lateral motion, for with the lateral rectal attachments of both eyes destroyed, the must be satisfied if they were simply straight. With this understanding the operation was undertaken. A lateral incision was made above each external rectus and the hook introduced far back, exposing the muscle, which was divided outside the capsule. An internal advancement suture, to avoid subsequent deviation, was placed in each eye. The after treatment consisted of a moist compress of carbolic acid, $\frac{1}{2}$ per cent. No pain followed the operation, which was done under ether. On the fourth day there was an inward deviation of 5° , which was not noticeable. No deviation has occurred in the interval of seven years which have elapsed.

¹ The liberty is taken of reproducing this and the following case from the Pulley Method of Advancing the Rectus. N. Y. Medical Record, Aug. 8, 1885.

² Bestimmung des Schielens, Snellen u. Landolt. Handbuch der Augenheilkunde. Graefe und Saemisch, vol. iii., p. 235.

³ Manual of Examination of the Eyes, Landolt, p. 49, ed. 1879.

⁴ Traite d'Ophthalmologie, Landolt, and Wecker, vol. 1, p. 915.

The most gratifying and at the same time surprising fact, especially worthy of note, was the unpredicted amount of *lateral motion*, which in the right eye amounted to 40° , and in the left to 45° . To account for this unexpected success the theoretic explanation was advanced that both external and internal recti formed a union with the posterior hemisphere of the capsule, for it is scarcely probable that so great an amplitude of motion could be accomplished by the recti muscles acting alone on the orbital cellular tissue. Another consideration (concerning which it must be confessed some apprehension was entertained) was the danger of *exophthalmos*, consequent on destroying the ocular attachments of the two opposite recti muscles. The entire absence of this effect is likewise regarded worthy of note.

My enthusiasm led me to secure photographs of his condition before the operation, and also before his departure ten days subsequently.



Case 3.—Complete paralysis of the 6th nerve, treated by exsection of the rectus internus.—Mr. T. A. D., Oneida, N. Y., aged about 30 years, presented himself at the College of Physicians and Surgeons, New York, with a condition of complete paralysis of the external rectus of the left eye, following a railroad accident twelve years since. In the collision his head was jammed between two cars. The recovery from the injury was rapid, leaving no other effects than an extreme internal deviation with partial concealment of the iris. Some years after an unsuccessful operation was performed. Tested at the College and also at the Manhattan Eye and Ear Infirmary: V.=counts fingers at 6 inches, internal deviation about 50° , absolutely no motion.

Being in the city, the courtesy of Dr. Webster was extended in an invitation to demonstrate the *pulley* method of advancement on the following day at the Manhattan Eye and Ear Infirmary. Judging from the amount of motion obtained in the case related above, it was thought that a simple section of the muscle back of the capsule would be insufficient; that an attachment to the posterior hemisphere would probably occur and reproduce a partial internal deviation. It was therefore determined to exsect the muscle as far back as possible, the intention being to destroy the efficiency of the internal rectus. Under the influence of cocaine, the globe was rotated with fixation forceps as far to the temporal side as the contracted and hypertrophied muscle would permit, in order to allow of the introduction of the hook. Parallel lateral incisions were made, liberating the muscle, which was drawn out by the continued traction of the hook and divided at the



remotest accessible point. The anterior portion was then separated from the sclera. An external advancement suture was inserted to hold the eye in position, and it was kept moist with a saturated solution of boric acid. No especial reaction followed the operation. The stitches were removed on the fourth day. The eye was perfectly straight. No exophthalmos or unnatural appearance existed except the absence of lateral motion. After a week, V.= $\frac{3}{8}$; in a direct line had binocular fixation, but lateral motion of the head either way caused diplopia. He left the hospital satisfied, with still some little ecchymosis, rapidly absorbing.

Case 4.—Exsection of the anterior portion of the externus for the correction of a paralytic divergence

following faulty operation for internal strabismus 44 years ago.—Mrs. H., Carrollton, Ill., aged 53. At 9 years of age had an operation for the correction of convergent strabismus, resulting in an extreme over-correction of the left eye only. The angle of the deviation was 45° , and the lateral motion did not exceed 10° .

The staring effect of the divergence, combined with the loss of motion, was a constant source of embarrassment. She was especially anxious to have the deformity corrected, since in the capacity of wife of a Methodist minister she frequently changed her abode and made new acquaintances.

With an understanding that parallelism, with but partial restoration of motion was all that could be certainly secured, it was determined to advance the internus if possible; to exsect a portion of the externus if necessary.

Under cocaine an incision over the internus was made and forceps introduced to secure the retracted muscle, which was found but could not be satisfactorily advanced owing to the cicatrization and long-standing contraction of 44 years. A suture was introduced to be subsequently employed to overcome the divergence. The tendon of the externus, secured by fixation forceps, was then separated from the sclera and freed from its capsular attachments by four incisions parallel to its course. Thus permitted to assume its meridian plane, it was brought into and secured in this position by the suture previously placed in the contracted internus. Lastly the anterior contused end of the externus, thus far held by the forceps, was removed, allowing the muscle to retract into the orbit. The stitches were removed on the fourth day, when she went to her home, from which she has written expressions of satisfaction with the result. Motion is very good and I regret not being able to give it in degrees. No exophthalmos exists.

Case 5.—Exactly similar to the preceding.—Mrs. S., Springfield, Ill., aged 54 years. Operated for internal squint at 10 years of age. Slight divergence of the left eye at first, became more marked as she grew older, partly owing to the relinquishment of her accommodation ($H. = +2.5 D$). She gradually lost control of the lateral motion which was reduced to 5° , and finally consulted me concerning pain which was assumed to be due to the permanent contraction of the externus.

The foregoing considerations led to the adoption of the method of treatment employed in the previous case, with similar results, except that the lateral motion obtained was more limited, not exceeding 20° . The eye appears straight during direct vision, pain has disappeared and she has been enabled to do an indefinite amount of sewing without discomfort. No increased prominence of the eye can be observed.

Case 6.—Similar to the two previous.—M. K.,

Kansas. Mr. K. is a German Lutheran preacher. He states that extreme divergence of the right eye resulted soon after an operation for internal squint. This occurred in childhood while he was still in Germany.

One operation for the correction of his deformity had failed, but he was sufficiently intelligent to appreciate the method suggested, of first accomplishing what was possible by an advancement and then weakening the externus sufficiently to restore a balance of the opposing forces.

The mechanical procedure was a repetition of the foregoing, and the result satisfactory to the patient. The lateral excursion amounted to 35° . There was no apparent exophthalmos.

Case 7.—Dislocation of the inferior rectus, and divergent strabismus 25° , following injury; treated by exsection of the superior, tenotomy of the external, and advancement of the internal recti.—Mr. J. P., Camden, Ill., aged 30 years. Fourteen years ago, while walking under a tree, he was struck in the right eye by a broken branch, causing him to fall to the ground. For three hours he suffered pain and nausea. The eye was dressed by Dr. Mead, of Huntsville, who removed some pieces of bark, after which the swelling was too great to permit inspection for eight days. At that time the eye was found deviated upward, carrying the upper lid with it. There was no power of downward rotation. The eye deviated also outward, but had lateral motion good. He reports the condition to have suffered no change since the injury. The external deviation is found 25° , and the upward deviation 30° , and paralytic. The maximum of lateral motion not noted.

The eye appears slightly exophthalmic. The upper lid would descend by a voluntary effort, but in the condition of rest it was elevated, making the vertical diameter of the palpebral fissure one-half greater than that of the fellow eye.

By an effort at closing the lid slight downward motion of the ball was effected. The permanent upward rotation of the eye subjected the inferior portion of the cornea and adjacent sclera to continued exposure, causing it to be always congested, and at times badly inflamed, preventing sleep. No epiphora existed.

Operation.—The correction of this rare deformity was planned as two operations. The first, to restore a balance of muscular efficiency in the vertical plane. The second, to correct the external deviation in the horizontal plane.

Under the influence of cocaine an incision was made over the location of the inferior rectus. By the grasp of the forceps muscular action was observed, but owing to the extensive long-standing cicatrization, no effective advancement could be made. An inferior advancement stitch was introduced and an attachment made to the sclera. The next step was to weaken the superior rectus sufficiently to permit the enfeebled inferior suc-

cessfully to oppose the force of its antagonist. Accordingly, its tendon was detached from the sclerotic and secured by the forceps. The effect not being sufficient, the muscle was liberated from its capsular attachment by incisions parallel to its course. It was thus rendered possible, by means of the inferior advancement suture, to secure a parallelism in the horizontal plain. The superior rectus was then shortened and allowed to retract back of the equatorial meridian of the eye, that it might not overbalance the strength of the dislocated inferior rectus. The immediate result was good. Some vertical motion was restored. The lids closed naturally, covering the ball.

Three days later the patient reports slight pain since the operation. Conjunctiva much congested. Vertical motion 30° . Amount of exophthalmos unchanged, but less conspicuous, owing to the closure of the lids over the sclera.

April 20, 1888, two months later. Returned for the correction of the external strabismus, which still remains 25° . At this time there was 5° of superior deviation. Vertical motion measured 30° .

The external deviation was corrected by a tenotomy of the externus with an advancement of the internus, one suture being inserted into the muscle, and the other into the episcleral tissue forming a pulley over which the advancement can be made with precision to any required degree, securing with a bow-knot, to permit of subsequent modification, as explained in a communication to the *Ophthalmic Review*, Sept., 1887.

The following cuts, which scarcely require explanatory text, may aid in the elucidation of the method of advancement attempted in each of the above cases.

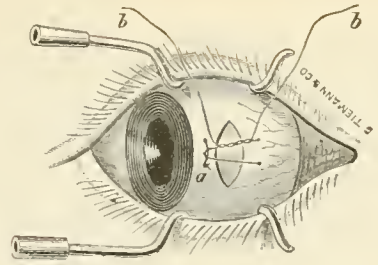


Figure 3.

By the aid of the needle, figure 1, it was found possible to insert the advancement suture, though the muscle itself could not be brought into view.

CONCLUSIONS.

The conclusions suggested by the above cases are: 1st. In the case of complete paralysis of either rectus, the exsection of the opposing muscle will enable the eye to be retained in the straight position, without motion in that meridian.

2d. In case of retraction of either rectus muscle into the orbit, under conditions rendering its advancement impossible, an equalization of the deviating power is to be obtained through section of its antagonist, posterior to its capsular attachment, following which, excursions in that meridian will be restored to an extent varying between twenty and fifty degrees.

3d. In the above cases of paralysis, or retraction of either rectus, the operation of section or exsection of its antagonist has not been observed to develop or increase any preëxisting exophthalmos.



Figure 1.

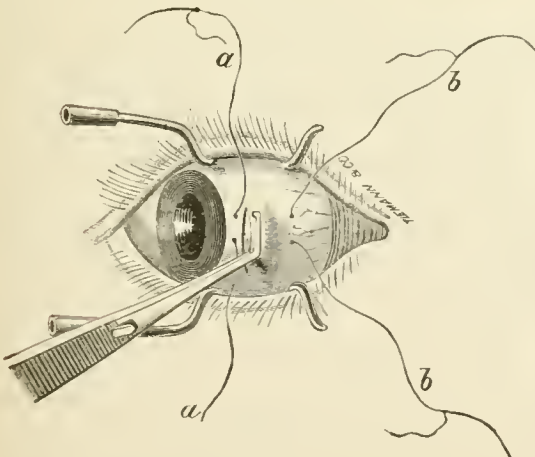


Figure 2.

ON THE CREMATION OF GARBAGE.

Read in the Section of State Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY J. BERRIEN LINDSLEY, M.D.,
OF NASHVILLE, TENN.

Very few persons outside of the limited circle whose official duties place them in constant contact with the offensive topic have any conception of the enormous amount and varied character of the filth generated by the daily life of a great city.

Hence they do not understand why it is that practical sanitarians are everlastingly harping upon cleanliness as the *sine qua non* of civic health; and earnestly calling for stringent legislation and large appropriations to enforce and carry out sanitary ordinances which shall maintain a pure soil within the city limits.

Practitioners of medicine understand that pure air, or impure air, has immensely to do with success or failure in the treatment of all diseases. Hospital and prison history for the past century, and infant mortality in cities and towns has made this a familiar fact. Few, however, understand that it is perfectly possible to render the atmosphere of even the largest cities pure enough for infants and invalids to grow and recover.

As showing the great quantity and variety of polluting material occurring without pause within the limits of a city, two or three examples may be given.

Baltimore, August, 1887, estimated by police census, had a population of 437,155. The amount of night-soil delivered at the dumps for the year ending December 31, 1887, was 51,107 loads, or 10,221,400 gallons. Probably more than half the inhabitants use water-closets, which carry off an equal amount. The dead animals, etc., removed during the same year, were:

Total number of dead animals	25,249
“ “ “ fowls	9,074
“ “ “ fish	23,574
“ “ cart-loads of dead fish, vegetable and other offal removed from various docks	1,067
“ number pounds of decayed meat condemned	1,495
“ number dozens of eggs condemned	607

Richmond, population 100,000. The report of contractor for removal of garbage, or kitchen refuse, year 1887, shows total number of loads carried off, 2,680 = 72,200 bushels.

Memphis, population 62,335. Number of loads of garbage removed in 1887 was 29,120.

These examples are selected at random. To keep the city clean is the principal work of municipal governments, and requires more expenditure of money than all other objects combined, excepting schools and police.

The city filth naturally falls into four main subdivisions—street sweepings, night-soil, dead animals, and garbage. The latter alone concerns us at present. The definition of garbage is refuse animal and vegetable matter from the kitchen. Every household is a workshop for garbage. In the country and small villages many a family is poisoned by the careless accumulation of the same near the well or sleeping apartment. In small towns it is mainly got rid of by feeding to swine and cows. In larger communities by carting off and polluting harbors or rivers.

Very recently, a great improvement has been introduced, to-wit, the destruction of garbage by fire. The object of this paper is briefly, but emphatically, to call attention to a great sanitary device which is not getting into public use near so rapidly as it ought.

In the Second Report of the State Board of Health, of Maine, 1887, the Secretary, Dr. A. G. Young, says: “Of the several methods which

have hitherto been in use (for removing garbage), it may be said that none of them are free from serious objections. If the garbage is carried any considerable distance into the country its transportation is attended with considerable cost. If buried, it still often remains a nuisance by contaminating the air or polluting the water in the neighborhood. If utilized in part as food for swine or cows, there is sometimes inflicted upon the community which sends it forth a retributive penalty in the shape of an unwholesome milk and meat supply.

“In the case of a sea-board town, if it is sent seaward, the garbage may depart from the place of its origin never to return, but in large part it is strewn along other coasts.

“The great desideratum has seemed to be some method which would not require a costly transportation of the garbage, or necessitate the defilement of our sea-shores, but which would radically and ultimately destroy it near the place where it is produced.

“Within the last few years a new method of disposing of garbage has been written and talked about, and to a considerable extent put into operation and practically tested. It is the method of destroying, or cremating, garbage by means of furnaces specially constructed for that purpose. Where these furnaces have been put into use, there is pretty uniform consensus of testimony as to their success. When rightly built they have done their work satisfactorily, and generally at considerably less expense than has hitherto been incurred in disposing of the garbage otherwise. But little or no cost is incurred for fuel to run the furnace, as the garbage is dried more or less before it is burned and is made to consume itself. The cost of labor in attending the furnace is not great, and generally there are no unpleasant odors given off in the process of burning.

“This method has not been much used in this country, but in Europe, and particularly in England, it has been extensively employed. Dr. O. A. Horr, a member of this Board, who has lately returned from Europe, made special inquiry in regard to garbage cremation in England, and all he could learn convinced him this system is a success in that country. The garbage furnaces in many of their towns have been in operation many years, and, in conversation with the Health Officer of the City of London, he learned that there are now forty-five of the English towns which make use of this method of garbage destruction.

“In this country, as far as I know, the experiment of destroying garbage by means of a furnace constructed especially for that purpose, was first tried on Governor's Island, New York Harbor. A description of this garbage-cremator was given in the *Sanitary Engineer*, of August 13, 1885, by Lieutenant Reilly, at that time Acting Assistant-

Quartermaster, U. S. A., at that post." This description is reproduced in the report above quoted.

In the twelfth volume of "Public Health," containing the reports and papers presented to the American Public Health Association, at the Toronto meeting, October, 1886, may be found a paper by Dr. George Baird, of Wheeling, giving an account not only of the destruction of garbage, but also of night-soil, by means of a furnace contrived by M. V. Smith, M. E., Bissell's Block, Pittsburgh, Penna. Dr. Baird is brief, and has "only tried to furnish proof of its capacity to solve a long-tried problem in the government of our cities and large towns."

The city authorities of Wheeling were stimulated to action by those of Bellaire, Ohio, on the opposite side of the river, but in close proximity. The dumping of night-soil and garbage from Wheeling into the Ohio river had become an intolerable nuisance to the inhabitants of Bellaire living just below. No alternative remained but to abate the nuisance. A similar alternative will soon be forced upon many of our riverside cities and towns. Law will decide that rivers do not belong to those who happen to dwell near the source, but equally to all below, and that the upper few have no right to deposit their filth in floating columns upon the lower many.

In the "Report on the Sanitary State of Montreal, for the year 1886, will be found an interesting narrative in this connection, giving instructive details as to cost, showing the extent of the work to be done and the complete success of the refuse crematories, and also of the night-soil crematories constructed by Mr. Wm. Mann. Dr. Louis Laberge, Health Officer of Montreal, read an elaborate paper on this topic at the meeting of the American Public Health Association, in Memphis, last November, which will be found in the thirteenth volume of "Public Health," now in press.

It thus appears that Wheeling and Montreal are the pioneer cities in arousing public attention to the cremation of garbage and night-soil. Other cities are taking hold of the experiment with much enthusiasm. The *Sanitary News*, of Nov. 19, 1887, states that at Des Moines, Iowa, a small Engle furnace is in experimental use, and is working very satisfactorily. At Pittsburgh a Rider furnace has just commenced its service. In Chicago a Mann furnace was being constructed. In the same valuable journal, March 17, 1888, may be found a full description of the Chicago garbage crematory, from which a duplicate of the plant could be built if desired. On April 14, it reports that the said crematory is doing good service in disposing of about fifty tons of material a day. The *Sanitary News*, of March 10, 1888, reports the success of the disposal of garbage by cremation at Milwaukee.

All who are concerned in this important subject will look forward with great interest to a paper on cremation to be read at the Milwaukee meeting of the American Public Health Association, November next, by Oscar C. De Wolf, M.D., the eminent Health Commissioner of Chicago.

We have seen how very recent is the resort to cremation in America for getting rid of garbage and other refuse; and it may with truth be claimed that Mr. J. M. Keating, the distinguished editor of Memphis, familiar with epidemics, first set this ball in motion. At the Indianapolis meeting of the American Public Health Association, October, 1882, he presented a paper on "The Cremation of Excreta and Household Refuse." He closes the paper thus: "There is no real safety save by cremation. Yankee ingenuity, once directed in this channel, will doubtless be equal to the emergency, and provide just the kind of cheap furnace or stove necessary for the purpose. By this means, and this alone, can the ultimate of sanitation be realized."

Already, in 1879, Mr. Keating had presented his views on this subject through the New York *Herald*, and with the endorsement of that influential paper. In the American Public Health Association, however, he had a deeply interested auditory of experts, and his views attracted much attention. He was induced by many of its active members to prepare an elaborate paper for its meeting at St. Louis, October, 1884, which was published under the title, "The Ultimate of Sanitation by Fire." This is probably the most complete and thorough monograph on the subject in the English language. It was widely circulated in the volumes of the American Public Health Association and through other channels.

Individually I subscribe to the principles and practical conclusions maintained and explained by Mr. Keating, and feel quite confident that in a few years Yankee inventive ingenuity will provide in great perfection the apparatus necessary for daily and cheap use. On this occasion I have confined myself to the cremation of garbage, because I am convinced that it will speedily come into use throughout America with like rapidity as has electric lighting, and will pave the way for a wider and more perfect application of sanitation by fire.

DR. JOHN MORRIS, of Baltimore, Md., thought the speaker's views would meet with general support. The interest in the topic was evidenced by the increasing number of garbage crematories. The health officer of Baltimore has recently visited Pittsburgh to inspect the operation of the garbage crematory in that city, with the intention of building a similar one in Baltimore.

DR. JONES, of Cincinnati, O., referred to the epidemic fever at Bellaire, O., which was due to the faulty method of garbage destruction. With

all health officers he agreed that an improvement in this would conduce greatly to the extermination of such epidemics; and only by burning the garbage was a possible source of disease eradicated.

DR. W. L. SCHENCK, of Kansas, agreed with the ideas expressed in the paper, and believed there was no other way as yet discovered to solve the problem of garbage destruction than by cremation. He was brought up on the Miami River, which was then a beautiful stream; now it was so polluted by garbage thrown into it, that the water could not be used for domestic purposes.

DR. LEE, of Pennsylvania, said, apropos of sanitation by fire, a good many who are present at this meeting attended the meeting of the American Public Health Association when the late Dr. Germer, of Erie, described the methods of sanitation by fire employed at the pest-house at Erie, Pa.—a can of kerosene and a match. There appeared to be no doubt that the future will demand sanitation by fire. Pittsburg had to meet the question, and devised a very satisfactory refuse crematory, in which he had seen wet tan bark consumed, and this was certainly satisfactory evidence of the efficiency of the crematory.

DR. MORRIS, of Baltimore: The only objection I can see to the general adoption of the plan is the expense. In Pittsburg natural gas was employed, a cheap fuel in that locality.

DR. LEE, of Pennsylvania: In the garbage crematory on Governor's Island the expense of operating is not as great as might be imagined. That crematory dries the garbage one day, and the next it is employed as fuel.

DR. J. B. HAMILTON, Surgeon-General U. S. Marine Hospital Service: In each family the means of cremating garbage exists. A garbage cart has not called at my house in several years, because all refuse is burnt in the kitchen fire. I do not believe an ordinance compelling this means of garbage disposal would be feasible, but think it might be accomplished through the authority vested in health officers. The improvements in the mechanical arts would justify the hope for the invention of a simple apparatus which could be employed in each house; something that would dry the garbage and then burn it. It seems to me that this plan of disposal is too generally neglected in household sanitation.

DR. LEE, of Pennsylvania: I know of several families who employ this plan, and I think it is more generally in use than is supposed.

DR. H. P. WALCOTT, of Massachusetts: I consider that Dr. Hamilton has more nearly hit the nail on the head than anyone. The object of the community is to do that which the individual cannot accomplish without unnecessary labor or expense on his part. It is for this reason that the combination of the efforts of many individuals constructs sewers and lays water pipes. But when it comes to garbage, each one has the means of

completely destroying it himself. When the impossibility of completely destroying the feces of typhoid fever, etc., by the means most commonly employed, even by bichloride of mercury, is considered, sanitary and health officers should bestow more attention on the only method which promises the successful attainment of this end, viz.: fire.

DR. ORME, of California: How can the garbage of cities be disposed of on a large scale?

DR. HAMILTON, U. S. Marine Hospital Service: It is only a question of combustion.

DR. ORME: Can health officers compel it? They might be able to do so in Eastern States, but this would not be possible in California.

DR. WALCOTT: It is a matter of experience. In the Eastern States health officers subject householders to much greater inconvenience. As, for instance, the requirements to keep the garbage in special receptacles; it is only removed at certain hours, it will not be removed if mixed with ashes, etc. If all these restrictions are successfully enforced, it would appear to be quite as feasible to require each householder to burn his own garbage.

DR. ORME: This question has caused a great deal of trouble in San Diego. What other cities have successfully employed cremation, and what are their crematories?

DR. LINDSLEY: Directions for reference to health authorities were given in his paper. They would undoubtedly supply all data.

DR. LEE: Dr. Walcott has suggested the idea of the household cremation of feces; this sounds repulsive—even impossible. But in my own household I had a patient, a young man suffering from melancholia. My family informed me he had not used the water-closet for several days. On inquiry I found he had cremated his feces in the stove.

DR. KENNEDY, Des Moines, Iowa: We have two garbage crematories in Des Moines in addition to those referred to by Dr. Lindsley. Dr. Turner has one in connection with his water-closet; all urine and feces go into it and are burned every ten days. One in the Capitol building is connected with the water-closet used by all the officers and employés in that building, and the matter is burned once a week. The odor is prevented by an inward draft from the seat of the closet. All gases and smoke generated in the weekly combustion are passed through a subsidiary fire and burned. One for dead animals is employed successfully. The expense is inconsiderable.

DR. LINDSLEY: In closing the discussion I would state that I simply brought it forward in order to secure the attention of physicians to this important question.

THE twenty universities of Germany conferred the degree of Doctor of Medicine on 847 candidates in 1886-87, as against 689 in 1885-86.

A CLINICAL STUDY OF THE SO-CALLED PRAIRIE ITCH, LUMBERMAN'S ITCH, ETC., WITH A CONSIDERATION AS TO ITS ENTITY.

Read in the Section on Dermatology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY WILLIAM T. CORLETT, M.D., L.R.C.P., LOND.
DERMATOLOGIST TO CHARITY AND ST. ALEXIS HOSPITAL, ETC.
CLEVELAND, OHIO.

From time to time one meets with reports in the medical press of unique forms of diseases of the skin closely allied in symptoms to scabies, yet it is claimed, differing therefrom in certain essential details. Nor is it confined to the medical press, but in medical societies and in the profession at large, there exists a firm belief in the entity of a disease, differently named in different localities, but all possessing four cardinal diagnostic points:

The first is *pruritis*, which is always present, but varies in intensity in different cases, in some it is continuous, while in others, there are periods of exacerbation, notably at the close of day.

The second symptom is objective, and consists in a *papillary eruption* which varies in distribution. The hands and forearms are most frequently affected, next in order the trunk and thighs, while the face does not always escape.

The third symptom, or more properly etiological feature, has been the *bête noire* of several amateur microscopists, who following the fashion of the time, have ascribed its *contagious* or *infectious* nature to an hitherto unlabeled parasite. A few years ago a graduating thesis was presented to an Ohio medical college on the bacillus of prairie itch.

The fourth and last distinguishing feature arises from the observation, that although resembling scabies, yet it *does not yield to the therapeutic measures best suited to that disease*.

It is well to bear in mind, that all cases of the so-called prairie itch do not present these four cardinal features, but one or more are present in every case.

In 1854, Dr. William Brodie, of Detroit, wrote a paper on "Prairie Itch," in which he disclaimed for it any relationship to scabies. If correctly informed, the honored ex-President of this Association still adheres to the precepts which were advanced when the dermatology of to-day was in its infancy, when the achievements of more modern dermo-pathological research were yet unknown, when the dermo-neuroses were not mentioned; and when the large family of lichens, which have since been largely eliminated and relegated to their natural places, were supposed to belong to a distinct inflammatory group.

In the winter of 1885, it was estimated that one person in every twenty in Louisville had the itch, and the time-honored remedy of hog's

lard and sulphur did not ameliorate the sufferings of the afflicted.

In writing of this, Dr. Hyde, of Chicago, says: Most probably the series of cold waves from the Manitoba region, which have lately been surpassing their usual limit, and reaching with unwonted severity some of the Southern States, has given rise to the itch in question.

In the *Kansas City Medical Index*, August Number, 1886, there appears an article entitled: "Is it Scabies?" The writer refers to the group of symptoms herein considered, and after quoting extensively, concludes by saying, that it is not scabies, neither is it a disease peculiar to this country. It is to be regretted, however, that the quotations do not inform us as to the means employed in eliminating the well-known disease of a like report, save in the positive assertions that the disease, in question, is not scabies, and that the observers have been in the continuous practice of medicine thirty, forty, and fifty years.

One exception, however, must not be omitted; Dr. Engstad, of Dakota, has made a careful microscopical investigation, and has not found the acarus—doubtless, in many cases of the so-called prairie itch Pasteur and Koch might do as much.

My attention was first directed to the "new itch" at the Ohio State Medical Society, in June, 1882, but a typical case was not met with until nearly five months later, at which time it was said to be epidemic in Portage and Wayne Counties, Ohio, and a committee was appointed from the North-eastern Medical Society to investigate the same.

The committee reported: The disease, for the most part, to be scabies due to the *acarus scabiei*.

In due time letters were received, stating that the treatment and hygienic measures suggested by the committee, had proven effectual in exterminating the epidemic.

In May, 1887, through the courtesy of the late Prof. A. B. Palmer, an opportunity was offered to investigate several cases of what was popularly known as the Michigan or Lumberman's Itch, then in the hospital of the University of Michigan.

Case 1.—Male, married, light hair, æt. 40, lumberman, complained of intolerable paroxysms of tingling and itching of variable duration, succeeded by intervals of quiet, which lasted sometimes weeks, sometimes months; during these intervals the subjective symptoms were entirely absent, and the lesions on the skin healed kindly.

Family History: His mother had suffered from neuralgia, and was, in the language of the patient, a nervous woman.

History of the Disease: It first appeared in the autumn of 1883. The season of the year had no appreciable effect on its course, but sudden changes of temperature, and the atmospheric conditions preceding a thunder storm were always

associated with an aggravation of the symptoms, and sometimes were sufficient to induce an attack. These attacks were ushered in by occasional shooting pains in the extremities, sometimes accompanied by a tingling sensation. Neither his wife nor children had contracted the disease.

Present Condition: The patient's general health is good; the eruption consists of irregularly shaped maculæ and vesicles of various sizes, in places grouped, but for the most part discreetly distributed. It is confined to the forearms, hands and legs. It is quite symmetrical and inclined to a linear distribution.

The case was regarded as a *neurosis cutanea*, having a certain resemblance—save in the exemption of the palms and soles—to the cheiropompholyx of Hutchinson, or to the dermatitis herpetiformis of Duhring.

Case 2.—Male, æt. 45, single, clerk, complained of an eruption which he had first noticed three years before. It consisted of small maculæ, having a dark punctate center, which had appeared on all parts of the body. Aside from the slight tingling and itching he felt little discomfort. Upon further investigation, the lesions were recognized as due to the *cimex lectularius*.

Case 3.—Female, single, æt. 30, teacher, of neurosthenic temperament. Complained of paroxysms of itching which appeared late in the afternoon, or upon retiring for the night. The family history is good.

History of the Disease: The itching began in the autumn of 1884, and disappeared in the following spring. At the next approach of cold weather it reappeared, and again disappeared the spring succeeding; in this way it has continued to the present. The patient sought medical aid, and was told that she had the Michigan itch. She slept with a sister without communicating it.

The present condition, both objectively and subjectively, is negative—the itching, since the moderation in atmospheric temperature having nearly subsided. The skin of the extremities is rough, with here and there a superficial cicatrix.

With this brief outline of the disease, it may be recognized as the *pruritus hiemalis* of Duhring.

Thus of the three representative cases of Michigan itch which, on account of their inveterate nature more than for any doubt as to diagnosis, were sent to the University of Michigan, not one belonged to other than well-known genera.

The two cases which follow occurred in private practice.

Case 4.—Male, married, æt. 46, clergyman, complained of an itching which gave him great annoyance. He was told by the physicians of his town that he had the new itch.

The history in brief is this: Four years ago, while engaged as a travelling preacher in Ver-

mont, he contracted an itchy disease of the skin, which, in due time, he gave to his six children—his wife escaped. The itching was most severe on the flexor surfaces, the hands were but little affected, and the face remained free. On the contrary, the children were first attacked on the hands.

At the time of examination the patient said he thought his disease had changed; he still complained of itching towards night-fall, but it appeared as distinct paroxysms aggravated by fatigue. The desire to scratch was irresistible, and unlike the condition preceding, it had once or twice suddenly disappeared for months, and as suddenly returned.

The present eruption too, unlike the permanent papillary rash of which he first complained, consists of whitish evanescent papules which tingle like the sting of nettles.

The children, he thought, had quite recovered.

This case is given because it brings out those points one is most frequently confronted with by the adherents of that unknown quantity—the new itch.

Thus the wife living in intimate family relationship did not contract the disease, because all are not equally susceptible to scabies any more than to variola, and bodily cleanliness may be effectually antagonistic. Later the primary disease became complicated with a neurosthenic element which, in turn, chanced to supplant it; but this may not prevent one from recognizing the first as most probably scabies, nor the second as lichen urticatus.

Case 5.—J. H., æt. 40, clergyman, complained of an itchy disease of the skin, for which he had been treated without avail.

Previous Condition: In 1870 he had what was probably eczema of the scalp, since which time his skin had given him no discomfort until six weeks ago, November, 1887, when he contracted an itchy disease from his children, they having taken it during the preceding summer while on a visit to Butler, Pa. The patient said, in the children the rash appeared first on the face, then on the body, and looked like measles.

Present Condition: The patient has a dry, rough skin, with a papular eruption, interspersed with a few small vesicles situated on the trunk and limbs; the hands and face are free. It is very itchy and prevents sleep. No acari could be found. The following day, at my request, the children were examined, and from the distinct burrows on the hands two acari were extracted, which confirmed the diagnosis of scabies.

Letters received from some of the medical gentlemen of Butler, informed me that the disease from which these children suffered was, at the time, epidemic in Butler County; that it was thought to be a new one; that its etiology and pathology were shrouded in mystery; but it was looked

upon as constitutional, and most probably contagious. It was said to yield to hydrargyri bichloridum, potassii iodidum, and solutio arsenicalis, Fowleri given internally variously combined; while acidum sulphuricum, zinci oxidum, and pix liquida, comprised the most reputed substances for external use. Woe betide the disease be it due to an inflammation, animal parasite or vegetable growth, that escapes this armamentarium.

Such a chain of evidence brought to light by this correspondence could not be withstood, accordingly the writer determined "to beard the lion in his den," and investigate the itch question of Western Pennsylvania.

Traces of the malady were heard of even before the confines of Ohio were passed, but not until Greenville was reached was a genuine case cited.

Case 6.—Was a lad who represented a household with scabies.

Case 7.—Eczema manuum.

Case 8.—Xeroderma.

Case 9.—Scabies.

At Meadville, of the several cases seen, but one will be given.

Case 10.—R. H., æt. 21, railroad employé, has had an itchy disease for a year, which prevented sleep. It has never invaded the face or hands; it was brought as one typical of prairie itch. Upon examination, he presented a papular eruption over the entire body with the exceptions cited; it was best marked on the flexor surfaces.

The patient said his hands were covered with oil while working, and he cleansed them with water and strong soap several times a day. Repeated efforts to find the *acarus scabiei* failed, but the papular lesions together with the history were sufficient, in the absence of more positive evidence, to warrant the diagnosis of scabies. The attending physician has since confirmed the diagnosis by letter, in which he says, the measures suggested at the time were effectual.

Oil City, Union City, and West Monterey, failed to satisfy the writer's desire for conquest or discovery.

Of the many cases that were collected at these places, suffice it to say, that they ranged from scabies to phtheiriasis, from erythema simplex to eczema pustulosum, from pruritus to herpes, and from pityriasis to xeroderma.

It is not that scabies has disappeared with increasing civilization as one has said, neither is it that the classical description of Cazenave does not apply to the scabies of to-day, but rather it is that we lose sight of the clinical fact that the *acarus scabiei* is only a local irritant, inducing in one a papillary eruption, which in another is vesicular, while again in others, it may become pustular.

Frequent bathing, too, and other extraneous conditions, will place a limit to its local invasion; thus it is seldom seen on the hands of people who

frequently bathe, as in the last case cited, and among refiners of petroleum the hands and fore arms remain free.

In northern climates pruritus hiemalis often adds to the complication in diagnosis, which, in many cases, can be eliminated only by the clinical history.

Again, the senso-neuroses, which are becoming more and more apparent, often baffle the most skilled. But from the mass of cases which have been examined in these investigations it is apparent, that there exists no material to form a new disease, but an appalling need of a more thorough knowledge of those we already have.

143 Euclid Ave., Cleveland, Ohio.

MONSTROSITIES AND MATERNAL IMPRESSIONS.

BY R. B. JESSUP, JR., M.D.,
OF VINCENNES, IND.

Whether maternal impressions do or do not influence foetal development, is a question still before the profession. It is not my purpose to discuss this question, but simply to place on record two exceedingly interesting cases. Though we may not offer an explanation of maternal impressions, yet that is no argument against the existence of such influences. There is such a thing as establishing a fact by accumulated evidence; and should this contribution be the means of starting a series of well-authenticated reports, we might, ere long, point to the convincing evidence of maternal impressions.

The first case occurred in the practice of Dr. Ritter, of West Baden, Orange Co., Ind. The history is, briefly, as follows: The doctor was called, August 24, 1885, to a young woman, 22 years of age, a primipara, who had completed her seventh month of pregnancy. She was in heavy labor, which was terminated soon after his arrival. The child gave no sign of life at birth, but movements had been felt by the mother a few hours before labor began. The labor was perfectly normal, and the doctor, after much persuasion, secured the specimen. When seen by me it was splendidly preserved in a solution of alcohol, and is a perfect specimen of "frog-child," or anencephaloid monster. The doctor would not part with his specimen, but kindly allowed me to have it photographed, the views, in two positions, being shown.

The body is perfectly developed, and the limbs, in their minutest detail, are without defect. The eyes are prominent, as shown in the side view; the nasal bones, imperfectly developed, give a flattened appearance to the face. There is no evidence of cervical vertebrae; neither cerebellum nor cerebrum can be traced, but a flattened, hardened sac of what may have been serous fluid, fills the space from above the eye-brows to the shoulders. The skin is not developed beyond the su-

per-ciliary ridges, in front, and ceases at a point corresponding to the first dorsal vertebra posteriorly. If we complete the circumference by an irregular line passing above the ear on each side, we will include the surface not covered by skin.



This surface is well shown in the side view, and is occupied by the flattened, hardened sac, which may have been much reduced in size by the alcohol, but contains no structure, and seems to have been formed by the membranes of the brain. The portion of the surface not occupied by the sac is also covered by a membrane. The margin is covered throughout the circumference with a downy growth of hair.

Aside from the interest attaching to this rare pathological specimen, is the history, well authenticated, of the mother. In her early pregnancy she was fishing, and caught a frog on the hook. It had swallowed the hook in such a way as to make it impossible to extract it. She attempted to kill the frog by crushing its head with a stick. As soon as she saw the mutilated creature she became deathly sick, and for days sickened at the thought of it. Her offspring bore the marking of the mutilated frog, and the peculiar frog-face. There is no history of constitutional disease in either parent, and the mother has since borne two beautiful, perfect children. The cause of her miscarriage can not be explained, for she had been most careful during her pregnancy. The cause of the frog monster, marked by a mutilation, the sight of which had made the mother deathly sick, and the thought of which had sickened her for days, can not be explained. We can simply record the fact that a miscarriage did occur, and a frog-child was born, which is still preserved; and, though we may find no ex-

planation, until we do we shall believe this monster due to maternal impression.

The second case is as remarkable as the one recorded of Jacob and his method of producing striped cattle, by placing rods at their watering-troughs while the mothers were conceiving.

Mr. Wells, the president of the French Lick Springs Co., of French Lick, Orange Co., Ind., owns a valuable Morgan stallion, named Ethan, which is nine years old. While admiring this horse for the first time I asked the groom why he had whipped him so unmercifully; for along his sides were stripes, such as are made by a whip. He said the horse was born with those marks. A few questions excited my curiosity, and I sought Mr. Wells to get an intelligent and reliable account of this remarkable case. He said he had owned the horse since a colt, and knew positively that he was always so marked; that the markings had never changed, so far as he knew; there never had been any except on the sides; never any on the back, rump, neck, or under the belly.

He also said that the mother had been a pacer, on the track, for several years. That she was bred to a valuable Morgan stallion, and about the second month of her pregnancy the mare was entered in a race. She was known to be pregnant when she went in the race, but at the time it was not considered dangerous for the offspring. It was a very exciting race, and, to win a heat, the mare was whipped very hard on the last half mile. She was marked badly along the sides from the whipping. She was driven to a sulky, and the whipping was done, as it always is by jockies, along the sides, between the shoulder and hip, and above the sulky-shaft. This colt was born with these markings, and has had them since.

I examined the horse the next day. The markings cover a space, on right side, 36 inches long and 8 inches wide; on left side, 24 inches long and 6 inches wide. On rubbing the hand over the surface the ridges and hollows are felt, exactly like the welts from severe whip-strokes. These welts are most abundant on the sides, with an occasional one on the shoulder, none reaching so far forward as the collar mark, and none extending farther back than the flank. The welts are from one-fourth to three-fourths of an inch in width, and a few could be traced 20-22 inches in length. The spaces between the welts, over the ribs, where they are thickest, are from one-half to one inch in width; in places, however, they are so close as to make measurement almost impossible. Unfortunately, I did not secure a photograph of the horse, but he is there, serving in the stud at French Lick. None of his colts, so far as known, have ever been marked like him.

These cases may serve to strengthen the faith of those who believe in maternal impressions, or excite thoughtful consideration in those who would call them mere coincidences.

A CASE ILLUSTRATING THE EFFICIENCY OF DR. SENN'S HYDROGEN-GAS TEST FOR PERFORATION OF THE ALIMENTARY CANAL.

BY W. L. SCHENCK, M.D.,
OF OSAGE CITY, KAN.

Recognizing that whatever illustrates any new method in surgery is of advantage to the profession, I take pleasure in reporting the following case:

August 13, 8 P.M., I was called to see J. Williams, a strong man æt. 49 years, and City Marshal, who had been shot about two hours before. Dr. Shaw had previously reached the case and administered a full dose of morphine. Found the countenance anxious, breathing slightly accelerated and pulse 80, temperature not taken, but about normal, pain and jactitation considerable. The ball, from a 42-calibre pistol, struck the abdominal wall on a level with and 4 inches to the left of the umbilicus. There was considerable hæmorrhage but no escape of gas from the wound. The finger would not enter it, but the probe followed it for about 3 inches toward the umbilicus when, in the position the body occupied, it refused to go any further. While there was no special evidence of the bowels having been injured, we decided to insufflate with hydrogen gas. The urine drawn with the catheter gave no evidence of injury to the urinary organs. The bowels not having been moved for two days, large and repeated enemata of soap and water were administered, but with little result, no peristaltic action being excited and voluntary effort causing unendurable pain. Before we could complete our arrangement for the insufflation midnight came. The general condition of the patient seeming good, we decided rest for the remainder of the night would be better for him than an operation by lamplight. Administering $\frac{1}{2}$ grain of sulph. morph. and $\frac{1}{10}$ gr. of sulph. atrop. hypodermically and leaving morphine to be given *pro re nata*, we adjourned until 9 A.M.

August 14, 9 A.M. The patient had had a quiet sleep and, though the countenance was anxious, the face pallid, the breathing hurried and the pulse 120 and quite compressible, he was cheerful and courageous.

In a few moments we were ready to insufflate and, if need be, to operate—Dr. J. M. Heller to administer chloroform, H. C. Galliher, chemist, to attend to the gas, and Dr. Schenck, assisted by Dr. Shaw, to use the knife. At this juncture, alas! the man of the law came upon the scene to prepare for a post-mortem by an ante-mortem examination. Encouraging the patient with the thought that the operation might prove fatal, he proceeded to take his testimony. We waited impatiently until 10:30, when, with greatly increased exhaustion, after a full dose of brandy, the patient

went kindly under the influence of chloroform and ether aa, and the hydrogen gas was soon traversing the rectum, descending, transverse and ascending colon. At the ileo-cæcal valve there was a slight gurgling sound followed by a tremulous movement, which was very soon transferred to the track of the ball through the abdominal wall, and in a moment the diagnostic flame told the tale of a perforated bowel. The bladder was emptied, the abdomen shaved and washed with an antiseptic solution, and at 11 o'clock an opening made from a little above the pubic bone to 2 inches above the umbilicus, and very soon an opening was found in the ileum 3 feet from its cæcal terminus. The edges of the opening were trimmed and it was closed with Gely's suture. Six inches nearer the ileo-cæcal valve the ball passed through the gut, its exit making a wound $\frac{1}{2}$ inch in length. The edges of these wounds were trimmed and closed with a continuous suture. Four inches further up the bowel there was a solution of continuity in its peritoneal and muscular coats. These were brought together with a few stitches and, there being no other wounds near except a perforation through the mesentery, the gas was again injected, when other openings were quickly demonstrated. Twenty inches further up the bowel was a hole in the bowel near its mesenteric attachment. This being closed, it was found that a little further on the ball had again passed through the bowel, one opening being an inch in length, and the space between the openings very narrow. This was closed by folding in the peritoneal coat and making the cuff suture with a continuous stitch, trusting to adhesion of the serous surfaces and the sloughing away of the intervening portion. The last perforations were double ragged wounds extending to within $\frac{1}{4}$ inch of the cæcum. Another injection of the gas proved all the openings, nine in number, closed. The bullet passed thence behind the cæcum, bruising it as it passed, and entered the crest of the ileum $\frac{1}{2}$ inch beneath its superior border. Either the twisted position of the body when the shot was received had lifted up the colon, or it was congenitally higher than is supposed to be normal.

During the operation the bowels were kept covered with a warm solution of boracic acid, and the cavity was well sponged and washed with solutions of the acid and of bichloride of mercury. The external opening was closed, with a drainage-tube at its lower angle, the suture dusted with iodoform, covered with a pad of absorbent cotton saturated with a 5 per cent. solution of boracic acid and kept in place by a broad flannel bandage. The patient had been on the table three and one-half hours, the latter part of the time but slightly under the influence of the anæsthetic, and was nearly pulseless. Hypodermic injections of brandy and, as soon as possible, brandy and ammonia by mouth, were administered. Slight reaction occur-

ing, he was wrapped in warm blankets and removed from the operating-table, but at 4 o'clock he sank rapidly and expired.

At 7 P.M. Dr. Shaw and myself made a legal autopsy, and found the ball had passed obliquely through the abdominal wall, as indicated in the diagnosis, entering the cavity $\frac{1}{2}$ inch from the umbilicus, passing through the bowels with a very slight downward obliquity, injuring them as already stated, and imbedding itself in the ileum near its superior border. No further injury to the bowel was discovered, and the cavity of the abdomen was found well cleansed.

Whilst this case proved fatal from the extent of injury to the bowels, it admirably illustrated the efficiency of Dr. Senn's method of diagnosis. The apparent direction of the ball left room for questioning whether it had dipped deeply enough into the abdominal cavity to reach the bowels, and the general condition of the patient did not solve the doubt, while the insufflated gas quickly told the tale.

MEDICAL PROGRESS.

LOCAL ANÆSTHETIC EFFECTS OF HELLEBOREIN.—V. VENTURINI and E. GASPARINI, working in the laboratory of Professor Buffalini, at Siena, recently made the discovery that helleborein had a local anæsthetic effect. A communication on the subject was made on March 9 by Prof. Buffalini to the Società tra i Cultori delle Scienze Mediche, of Siena. The physiological effects of helleborein and helleborin were already partly known by the experiments of Schroff, Dragendorff, Marmé, Santoliquido and Paul. Santoliquido recently contemplated an investigation of the influence of these two glycosides on the heart. The local anæsthetic effects of these two substances, however, had been quite unknown hitherto. The following is a summary of the observations of Venturini and Gasparini: On the instillation of some drops of a solution of helleborein into the conjunctival sac of rabbits, complete anæsthesia of the cornea came on after fifteen minutes. Pricking with a needle was not felt by the animals. The same results were also obtained in experiments on dogs, without any interference with the function of the pupils or eyelids or with vision. The experiments were then repeated with a solution each drop of which contained about 0.0005 grams of the glycoside; the same anæsthetic effect was produced on the cornea after an interval of fifteen minutes, when 3 or 4 drops of this strength were injected into the eye. The cornea regained its normal sensibility in half an hour from the commencement of anæsthesia. No bad after-effects were observed on the subsequent days. Venturini and Gasparini consider that, in operations on the eye, helleborein is pref-

erable to cocaine, as its effect is limited to the cornea, and does not affect the sensibility of the other parts of the eye in any way. They conclude that:

1. Helleborein, even in a very diluted solution, produces complete anæsthesia of the cornea, without irritating the conjunctiva or the cornea. The anæsthesia produced by this substance is of longer duration than that obtained with cocaine.
2. Though the anæsthesia is complete, there is no relaxation of the eyelids.
3. No change in the pupil or in the intraocular tension is observed.
4. Helleborein causes local anæsthesia in the parts into which it is injected. As, however, it has a powerful cardio-toxic effect, its application to the cardiac region requires great precaution. Whether the influence of the helleborein is to be ascribed to the helleborin (as Professor Buffalini thinks) has yet to be decided.—*British Medical Journal*, August 4, 1888.

ELECTRICITY vs. LAPAROTOMY IN INFLAMMATORY AFFECTIONS OF THE UTERINE APPENDAGES.—DR. EGBERT H. GRANDIN, of New York, says:

The class of cases in which I would contend electricity will prove as serviceable, and frequently more so, than laparotomy; and this, too, without subjecting the woman to the slightest risk, are those in which careful exploration, if necessary under anæsthesia, fails to suggest the presence of pyosalpinx. Disease of this nature calls for speedy and radical action. The knife is here indicated, even as it is in any other region of the body where pus is predicated. A history of recurrent attacks of pelvic peritonitis should constitute the call for laparotomy, lest the next attack should eventuate in a general peritonitis fatal to the patient. Where, however, the careful bimanual exploration of the patient, the rational history and the appearance do not suggest the likelihood of pyosalpingitis, then the greatest palliation, if not entire cure, may be predicated from resort to electricity. The conditions termed catarrhal salpingitis, pachysalpingitis, perisalpingitis, perioophoritis, I would include in the class which may properly be subjected to electricity rather than to the knife.

When I first began to systematically use electricity in my gynecological practice, I deemed it contraindicated in acute pelvic peritonitis—the term under which, for the sake of brevity, I would include the affections just referred to—and to be used with caution in subacute instances. With increased experience I have learned that the agent may not alone be resorted to with safety, but with benefit as well, where the condition is acute. By means of electricity the circulation is regulated, absorption is favored, and we effectively counter-irritate. The technique of the application I have so recently described that it is unnecessary here to do more than lay stress on certain of the cardinal

principles. Notwithstanding the advocacy of Apostoli, Engelmann, and others, I am not convinced that it is at all essential to success to use currents of great intensity. Indeed, in certain instances, I am satisfied that I obtain greater benefit through resort to weak currents of considerable duration. The action of the current is thus more prolonged, and the effect more lasting. The non-active pole, and this will ordinarily be the negative pole, should cover as large a surface as possible, the abdomen being the preferable site for its application. As long as there exists tenderness on pressing the vaginal vault, or pain in imparting motion to the uterus, galvanism is indicated, the positive—the anæsthetic, alterative pole being placed within the vagina. When the symptoms have disappeared, faradization, first the primary current, and later the secondary, will be found most effectual in completing the cure in so far as this is possible. In the intervals between the séances, and these should be held every other day, at the outset, the uterus should be gently supported by a wool tampon—the organ should not be crowded up by a number of tampons packed as solidly as possible into the vagina, for thus as much harm is done to the ligaments, blood-vessels, and adjacent organs in an upward direction as they suffer when, without the tampon, the uterus sags downward. Attention to these simple rules is strictly essential to success. Through resort to electricity the gynecologist may not gain such great renown as the operator who can boast of a long series of operations, and who can exhibit to colleagues and to patients the bottled specimens, emblems of his prowess, but he will have the satisfaction—no mean one—of knowing that he has relieved suffering without risking life, and he will find that a reputation for conservatism bears golden fruit in plenteous harvest.—*Medical Record*, August 25. 1888.

CAN THE MOTOR AREA BE REMOVED IN LARGE PIECES WITH IMMUNITY FROM SERIOUS CONSEQUENCES?—In his Address at the recent annual meeting of the British Medical Association, DR. WM. MACEWEN said: If this region be of such psychical importance to movement, and destructive cortical lesions in it are followed by secondary degeneration of the motor tracts, then excision of these areas will necessarily induce permanent paralysis, late rigidity, and ultimate structural contracture. The removal of large wedges from the brain, especially in the motor centres, will induce serious effects upon the brain as a whole, causing, during cicatrization, a dragging and displacement of the neighboring parts, with final anchoring of the cerebrum to the cicatrix. In an acute ulcerative process rapidly advancing, such as an abscess, none can hesitate to evacuate the pus; it is not the living brain-substance which is removed, but the peccant matter alone. Epilepsy presents

quite another aspect. In the presence of a stationary cicatrix, or of a slow-growing neoplasm in the motor area, occasionally producing fits, few would attempt the removal of such a large wedge of the motor region as to induce permanent hemiplegia. Even when the fits are much more numerous and aggravated, it is serious to contemplate the production of hemiplegia while attempting the cure of the fits. No doubt these epilepsies, when long continued, especially in early life, are apt to lead to great and extensive instability of the motor cortex, so as to warp the whole cerebral function, and ultimately involve life itself. Still, how much better is the cure by the removal of a large wedge, involving the greater part of the motor area? How many people would submit to have their upper and lower limbs, on the same side of the body, amputated by disarticulation at their proximal joints—for this is what the hemiplegia amounts to—in the process of cure of their fits? Numerous epileptics have been asked the question by me, but none have expressed their willingness to undergo such a cure. Even had they done so, the circumstances would require to have been exceptional to have induced one to hazard the life of the patient for so poor a result. It is true that corresponding wedges have been removed from the brain of monkeys, and these animals have survived for months thereafter. In men also they have been removed by others; in one instance reported to me the patient remained completely hemiplegic until his death some months after. Nor is the removal of very large tumors and large wedges of brain free from immediate peril to life. In several instances operated on elsewhere, death has ensued—one while the tumor was being removed from the brain, and one immediately after the completion of the operation.

In cerebral surgery, not only does one require to localize the lesion, and to select suitable cases, but also, after exposing the brain and its lesion, to judge when to advance and when to hold the hand. In a case rightly localized from the motor symptoms, a tumor was exposed in the leg and arm centres, on the left side of the brain; but its dimensions were such as to cause me, after carefully contemplating them, to refrain from removing it, as it would have led to a hemiplegia of a much more pronounced character than was present. Instead, the vessels which supplied it with nutriment and which ran into its substance, from the surface, were all ligatured, in the hope that this would effect a restraining influence on its growth. The patient recovered and is considerably improved. Though the fits are not quite cured, they are not so severe as formerly, and are somewhat altered in character.—*British Medical Journal*, August 11, 1888.

THE PHYSIOLOGICAL ACTION OF ONOBAIO has

been investigated by MM. HENRY DE VARIGNY and PAUL LANGLOIS. Onobaio is an arrow poison used by the natives of Obock in the form of a hard resinous ball. A 1 per cent. solution was made with some of these balls. It was found that injections of 5 or 10 milligrammes of this solution kills rabbits and guinea-pigs very quickly. The animal is bent double; it leaps about, then falls over on its side, making efforts to breathe, and dies with well-marked symptoms of asphyxia. If the animal is then opened the heart will be found to be perfectly still. The ventricles no longer beat; a slight action is still observed in the auricles. The lungs are pale and anæmic. During life no disturbance of motor power or of sensibility is observed. One or two milligrammes were injected under the skin of a frog in which the heart had been laid bare. After a few minutes it was found that the ventricle became contracted after auricular systole; this phenomena increased: four or five minutes after the injection the quantity of blood entering the ventricle at each auricular systole became infinitesimal, and finally none passed in. The ventricle ceased to act; the auricles continued to contract for ten to fifty minutes. The following experiments were made upon dogs which had been subjected to the action of chloral and curare. In one case a large dose (1 centigramme of onobaio in 1 cubic centimetre of water, injected in about a minute) caused cardiac disturbance, without any definite respiratory symptoms. To avoid the direct action of the poison on the endocardium a solution of 1 milligramme in 1 cubic centimetre of water was injected into the veins at intervals. In the case of weak doses (4 millig. to 13 pounds of the animal's weight) the breathing became much slower a minute or two after the injections. This phenomena, which was not accompanied by notable cardiac disturbances, lasted one or two minutes, and then ceased. Larger doses (8 milligrammes to 11 pounds of weight, administered in four injections in about half an hour) quickened the breathing for a few instants. The breathing then became gradually slower, and at the end of two or three minutes entirely ceased. The heart continued to beat, but subsequently became slower, and finally ceased. In an experiment with 6 milligrammes to 11 pounds of the weight the cessation of the respiration did not arrest the action of the heart. Artificial respiration was practiced; the heart continued to beat, and at the end of a few minutes the respiration became natural. Onobaio sometimes causes vomiting in animals which have not been previously brought under the influence of chloral.—*British Medical Journal*, June 30, 1888.

NAPHTHALIN IN PLACE OF ARSENIC AS AN INSECTICIDE.—HAGER calls attention to the dangers attending the use of arsenic and its prepara-

tions as an antiparasite and vermin-killer. He strongly recommends to use naphthalin whenever arsenic would be indicated for the above purposes. He gives, among others, the following formula:

Naphthalin	40 parts.
Chloroform	80 "
Benzine	100 "

℞.

Heat carefully to about 20° C., and agitate till the naphthalin is dissolved. American petroleum may be substituted for the benzine. These solutions may be applied as they are to the skin of animals infested with vermin, or they may be applied in a diluted state. The naphthalin may be incorporated with vaseline if an ointment is desired for use, or if an oily liquid is wanted the above solutions may be mixed with liquid vaseline in the proportion of 200 of the former to 1,200 of the latter. Hager also speaks highly of the infusion of quassia as an antiparasitic application.—*Pharmaceutical Record*, May 15, 1888.

SALT IN THE SICKNESS OF PREGNANCY.—In a recent number of the *Medical Press* DR. GREENE records two cases of sickness of pregnancy treated successfully with common salt. In the first case the salt was given in 5 grain doses in 1 ounce of chloroform water. The sickness lessened after the first dose, and ceased entirely when six doses had been given. The medicine was continued three times a day until the end of gestation. In the second case the same result was obtained. The action of the salt in these cases may have been due to its antacid properties; in both cases the secretions were very acid, but soda, potash, and ammonia had no good effect. Dr. Green suggests that, as some patients might think the remedy too simple, it should be prescribed by its clinical name—chloride of sodium.

SUBSTITUTE FOR MILK IN INFANTILE CHOLERA.—TEDESCHI recommends the following as a substitute for cow's milk:

White of eggs	15 grams.
Oil of sweet almonds	35 "
Sugar of milk	40 "
Carbonate of soda	0.40 gram.
Common salt	0.20 "
Neutral phosphate of lime	2.50 grams.
Water	1 litre.

Make an emulsion.

PILLS FOR COUGH IN EMPHYSEMA AND CHRONIC BRONCHITIS.—The following pills were used by the late GUÉNEAU DE MUSSY:

Purified tar	2 grams.
Dover's powder	3 grams.
Powdered benzoin, q. s.	

Make 40 pills.

S. Take 2 to 6 pills daily.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, OCTOBER 13, 1888.

THE STUDY OF DISEASES OF CHILDREN.

At the recent annual meeting of the British Medical Association DR. W. B. CHEADLE, President of the Section of Diseases of Children, took as the subject of his address "The Present Position of the Study of Diseases of Children in Relation to Medical Education." This address is at once instructive and suggestive.

Dr. Cheadle doubts the wisdom or propriety of elevating diseases of children into a specialty—of separating them from the general study of medicine and surgery. Art is still too narrow, and human wit too broad to make such a specialty, Dr. Cheadle thinks; and but for the larger experience at the great general hospitals our knowledge of childrens' diseases would be much less. Doubtless there are very many that will not share this opinion. Still, the fact remains that in medical education the vast importance of the thorough study of disease as seen in children is but imperfectly realized. While it may be true that a specialty of diseases of children is unnecessary, special study of diseases of children is necessary. General practitioners form the bulk of the profession, and the majority of their patients are children, whose bodies are peculiarly susceptible to diseases and treatment, their diseases requiring a nicety of discrimination and a delicacy of skill in management beyond what is required in adult cases. As a rule,

too, many of the disorders of early life require immediate treatment; and to wait for the specialist is to lose time.

"The death rate of children is almost ten times as great as of adults; and yet to fight against this we are content to send out our students unpracticed, inexperienced and untaught." This, says Dr. Cheadle, is a serious blot upon our system of medical education. Almost forty years ago Dr. Latham, Sir Thomas Watson and others, pointed out the very defective condition of knowledge with regard to diseases of children, and insisted on the urgent necessity of more adequate provision for instruction in the subject. Dr. Cheadle fears that the situation is very much today what it was then—and he speaks as whilom dean of a medical school, as physician to a general hospital as well as one for children, and as an examiner in medicine for about ten years. As an examiner he has always made it a point to set questions in diseases of children, and his uniform accumulated and accumulating experience is that the candidates, as a rule, are lamentably ignorant of this subject. Many of them are destitute of any clinical experience of the common diseases of infancy. It is a fact, and certainly one to be deplored, that many general practitioners dread to be called upon to treat a sick child; they find extreme difficulty in making any clear diagnosis; and many treat all little children on "general principles," as though all children were alike.

As a matter of fact, the practitioners that treat children skilfully and on scientific principles, have for the most part learned what they know after graduation. Some hospitals, as we know, do not receive children of less than 2 years of age, except in special and urgent cases. But it is in the first two years of life that we mostly encounter the diseases distinctive of infancy and childhood. This is the period in which the congenital faults of structure and of inherited disease manifest themselves, and when the troubles of feeding and dentition, with their consequences, occur.

In the way of reform Dr. Cheadle suggests:
1. That the examining bodies make it clear that a competent knowledge of diseases of children will be required of candidates in their final examinations. 2. That they also require, as a part of hospital practice, an attendance of three months on a course of clinical instruction in diseases of children, which shall include those of early in-

fancy, at either a general or special hospital. 3. That children under 2 years of age be admitted freely to the childrens' wards of general hospitals and to special hospitals. 4. That an organized system of instruction, both practical clinical instruction and lectures, be introduced at each medical school.

Since a very large proportion of the patients of the general practitioner are children, and seeing that infant mortality is so much greater than adult mortality, no argument is required to show that medical students should receive adequate instruction in diseases of children, and that they should be thoroughly examined as to their competency to diagnose these diseases and treat them.

The defective education in diseases of children by the medical colleges and hospitals of Great Britain as represented by Dr. Cheadle, certainly does not exist to the same extent in this country. A very large proportion of our medical schools have a professorship of diseases of children filled by an active and efficient teacher, and with which he connects one or two clinics each week in the childrens' department of a hospital or dispensary, to the latter of which especially, children of all ages have access. And attention to the instruction in this department is as obligatory upon the medical students as to that in any other department of the college curriculum.

CAUTION IN RECTAL INSUFFLATION WITH HYDROGEN GAS.

Senn's paper, entitled, "Rectal Insufflation of Hydrogen Gas, an Infallible Test in the Diagnosis of Visceral Injury of the Gastro-intestinal Canal in Penetrating Wounds of the Abdomen," received merited attention, at the time of its presentation before the Section on Surgery, at the last meeting of the American Medical Association.¹ Since the publication of this remarkable essay, numerous cases, illustrative of the procedure, have appeared in various home journals. Dr. W. L. Schenck, of Osage City, Kansas, reports a case of interest in this connection, that appears elsewhere in the columns of the present issue of THE JOURNAL.

As yet, no untoward results have been recorded, and the belief is general that the method is totally

devoid of risk. This impression, however, is erroneous. There are at least two possible sources of danger in the use, or rather misuse, of the plan that deserve serious consideration. As at present informed, these items have received adequate attention neither in the original paper, nor in later discussions of the procedure. It is the purpose of this note not to enter into a criticism of Senn's really brilliant effort, but merely to mention certain precautions, that are at once simple, rational and necessary.

In so far as rectal insufflation with hydrogen gas is a problem in chemistry, it postulates chemically pure hydrogen, and absolute freedom from atmospheric air. Now, it is apparent that these two conditions may not always be supplied with ease. As the difficulties in the practical details of the method appeal most directly to the chemist, we have sought responsible opinion from an eminent professional source. In reply to our inquiry, a distinguished teacher of chemistry writes:

"I believe Professor Senn, himself, says that he has never seen any bad effects result from the use of the gas, and I have no doubt that in skilful hands, such as his, there would probably never be any danger in its employment. But I can readily imagine that a careless and inexperienced operator might meet with unhappy results in at least two ways:

"I. Unless the hydrogen were generated from perfectly pure material, it might contain impurities of greater or less toxic power. The most dangerous of these would be hydrogen arsenide (arseniuretted hydrogen), which is one of the most powerful poisons with which we are acquainted when inhaled into the lungs, and *presumably* quite dangerous, also, when injected into the bowels. Since both sulphuric acid and zinc, as ordinarily found in commerce, are usually considerably contaminated with arsenic, the hydrogen given off from such material would be quite rich in the poisonous hydrogen arsenide. Professor Senn directs that pure zinc and acid be used; but a careless operator might forget or neglect this and use commercial material, with results that I fear would be exceedingly unpleasant, if not dangerous.

"II. There is certainly danger of getting a mixture of atmospheric air with the hydrogen, either by faulty generation or by unskilful manipulation during insufflation. In that case, an

¹ THE JOURNAL, June 23d and 30th. Vol. x, Nos. 25 and 26.

explosion would be likely to occur, upon applying a light, which might do considerable damage. Care, however, could remove this danger wholly, for a skilful operator would assure himself of the purity of his hydrogen before using it, nor would he permit it to become contaminated during use. As there is but a very small amount of oxygen in the intestinal gases,² I think there would be no danger of an explosive mixture being formed after insufflation of a pure gas.

"I think we may conclude, therefore, that Professor Senn's method is entirely destitute of danger in careful hands; but if unskilfully employed we might very possibly have bad results either from a poisonous gas, or from an explosive admixture of air. This, however, does not detract from the value of the procedure, for scarcely any operation in surgery is safe unless carefully conducted."

THE MEDICAL EXAMINING BOARD OF VIRGINIA.

A few weeks ago we called attention in *THE JOURNAL* to the excellent work that has been done by this Board, showing from the work that boards of examiners like the Virginia Board are a necessity for the protection of the public from incompetent practitioners. We need not again go over the ground covered by that editorial article. The readers of *THE JOURNAL* will remember that the editorial in question was favorably commented on in our pages by so excellent a teacher and so learned a physician as PROFESSOR WILLIAM OSLER, of Philadelphia, who, though a graduate of a Canadian school is now a teacher in one of the high-class medical schools in the United States.

It will be remembered that we said in our editorial article that the opponents of the Medical Examining Board of Virginia were made up chiefly of the teachers in the Medical College of Virginia, and the students of that college; and that the reason for their opposition is the fact that the Medical Examining Board of Virginia has shown conclusively that the Medical College of Virginia—with some other colleges in the country—is not doing creditable work. We pointed out that the remedy for colleges, whose students have not stood well before the Virginia Board, is in their own hands. If they will teach

their students as they should be taught there would and could be no complaints.

It seems, however, that the teachers in the Medical College of Virginia, and a few who sympathize with them, prefer to remedy (?) the matter in another way. The Medical Society of Virginia meets in about a week, and the teachers in the Medical College of Virginia will go to Norfolk for the avowed purpose of "ousting" the present members of the Board. Perhaps they have some of their sympathizers that they wish to elect or have elected members of the Board by the Medical Society of Virginia. With some knowledge of the *personnel* of the Virginia Society we do not for a moment believe that they will put out of office men who have done their duty, and their whole duty in so far as they could, to the profession and the people of Virginia. By doing this the Medical Society of Virginia would declare practically in favor of a low standard of medical education—and we do not for a moment believe that the Society will do this.

Some of the teachers in the Medical College of Virginia, and their friends, have said that the recent editorial in question was written by members of the Medical Examining Board of Virginia, or that it was written in Richmond. Some of them claim to recognize "Richmond ear-marks." The editorial was written in Chicago, by a regular editorial writer of *THE JOURNAL*, and the sole basis of the editorial was the last report of the Medical Examining Board of Virginia. It was written by a disinterested person, and, so far as the particular Board and State are concerned, from disinterested motives. The sole motive in writing the article was to show what a good Examining Board could accomplish in the way of protecting the public against badly taught and incompetent graduates of schools that do not do good work. We were convinced when the editorial was written that we were in the right, and subsequent events have shown that we were right. We were convinced that the Virginia Examining Board was and is doing good work, and we are still convinced of it after looking into the matter more closely. We were equally convinced that the Medical College of Virginia—and other colleges mentioned—were doing bad work; and of this we are still convinced. And this conviction is strengthened by the attempt to be made at Norfolk to remove honest workers from the Board.

²Gautier. *Chimie appliquée à la physiologie, à la pathologie*, etc., vol. i, p. 426.

We hope the Medical Society of Virginia will not be guided by a few men who wish to cover up their bad work. Will the teachers in the Medical College of Virginia openly acknowledge that their work is bad, and their graduates incompetent to practice medicine, by attacking the Board? We hope not. Would it not be better for themselves, for the college, for the profession of the State, and for the public, if they would resolve to teach their students so that they may take equal rank with the graduates of the University of Virginia? Do the students of the Medical College of Virginia wish, on the plea of ignorance and incompetency, to be admitted to practice without examination? That is what their petition to the Virginia Legislature last winter amounted to. Will they not rather demand of their teachers that they place them on equality with all other students and graduates, by instructing them so that they shall be competent practitioners of medicine. The remedy, as we said before, is in the hands of the colleges, not the Legislatures. The Virginia Legislature may grant the degree of Doctor of Philosophy to every graduate of the Medical College of Virginia; but that will not make them philosophers. It may enact that each of those graduates is learned in medicine; but that will not add anything if their teaching has been such that they cannot pass the examination of the State Board. No one can be made moral by act of Parliament—and no Legislature can enact a knowledge of medicine into the mind of any student. As we know the tree by its fruit, we know the college by its graduates. "A fair field and no favors" is all that any competent man wishes.

TRANSACTIONS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS.

The full proceedings, addresses, papers and discussions of the International Medical Congress at Washington, September, 1887, have been published and distributed to the members and others who were entitled to copies; making five royal octavo volumes of over 760 pages each, an aggregate of 3,800 pages, and about 600 illustrations. The Transactions of the great International Medical Congress at London, in August, 1881, are comprised in four royal octavo volumes averaging 638 pages, an aggregate of 2,552 pages and 180 illustrations.

It will be seen that the Transactions of the Washington Congress contain nearly one-third more printed matter and three times as many illustrations as those of the London Congress. For style of printing, quality of illustration, and we may venture to add for value of matter, they will bear favorable comparison with the Transactions of any one of the preceding International Medical Congresses. Much credit is due to ex-Secretary-General Hamilton and his assistants for the expeditious and excellent manner in which they have executed their laborious task.

EDITORIAL NOTES.

DEATH FROM CARBOLIC ACID.—At Milton, Ohio, on October 6, a 3-year old child secured a bottle of carbolic acid and a teaspoon, and began feeding it to the baby brother in the cradle. The screams of the baby attracted the mother, who was outside, and when she reached its side it was gasping for breath and died in a few minutes. It seems almost incredible that anyone having any business with carbolic acid could be so criminally careless as to leave the poison within reach of a child.

LARGE INTESTINAL DIVERTICULUM.—In the *Centralblatt für Gynäkologie*, No. 17, 1888, MAAS, of Würzburg, reports the case of a boy, æt. 14 years, whose abdomen began to enlarge soon after birth, and continued to enlarge until a year before the lad came under treatment. It then became much larger, and the boy had dyspnœa and palpitations. The bowels moved frequently, but the stools were scanty and thin. The abdominal walls were very tense, though not cedematous. The urine was normal; the skin pale; some subcutaneous veins were uniformly dilated. The abdomen measured 35.5 inches at the umbilicus, and 3 inches higher the circumference was 39 inches. There was uniform tympanitic resonance, and the lateral impairment was slight. No solid tumor could be detected. An enema was given, and much fecal matter was passed. When a sound was passed into the rectum it could be felt apparently over the tumor, under the parietes, and hence a diagnosis was made of congenital hydro-nephrosis on the left side, or cystic degeneration of the kidney. An exploratory puncture in the left loin with a large trocar allowed some feces to

escape, and an incision was then made along the linea alba. The surface of the tumor was covered by a large plexus of veins. The operators feared to proceed, and the abdominal wound was closed. There was no subsequent peritonitis; but a sudden increase of the swelling was followed by intense dyspnoea, and this by sudden death. The autopsy showed that the tumor was an immense diverticulum from the upper part of the rectum, containing some gas and 14 litres of thin fæces. The communication with the rectum was at the posterior inferior part of the pouch. The rectum was strongly compressed by the tumor. Kölliker and Maas attribute the diverticulum to a disturbance of the normal involution of the blastodermic layers.

SOCIETY PROCEEDINGS.

American Surgical Association.

Annual Meeting, held in the Main Hall, Grand Army Building, Washington, D. C., September 18, 19, 20, 1888.

(Continued from p. 499.)

TUESDAY, FIRST DAY—AFTERNOON SESSION.

DR. W. W. KEEN, of Philadelphia, read a paper on

THREE SUCCESSFUL CASES OF CEREBRAL SURGERY,

including: 1. The removal of a large intracranial fibroma. 2. Exsection of damaged brain tissue. 3. Exsection of the cerebral centre for the left hand.

Case 1.—Large tumor in the cerebrum, probably arising from an injury at the age of 3 years; tumor removed at 27; hernia cerebri; recovery.

The patient, a young man of 27, at 3 years of age fell, striking his head on some bricks. At 5 he had measles followed by discharge from the right ear, impairing hearing. In February, 1885, epilepsy supervened, with intense pain in the head. About April right-sided hemiplegia was complete, with aphasia. Right pupil was largely dilated and irresponsive to light; vision imperfect.

When first examined by Dr. Keen the only remnant of his former condition was epilepsy, hesitation of speech and headache. In the attacks the head and neck were turned to the left, while the body was turned to the right. Convulsions general. Right pupil larger than left. A small scar was decided on as that resulting from the accident. This was $\frac{1}{2}$ inch above and in front

of the left superior stephanion, $2\frac{1}{4}$ inches to the left of the middle line, and 3 inches behind the external angular process. The temperature on the left side of head was 1° higher than on the right. Dynamometer recorded right 30° , left 35° . Left knee jerks normal, right subnormal. Diagnosis, probable tumor at the base of the frontal convolutions, involving the centres for the leg, arm, face and speech.

The operation was performed December 15, 1887. A $7\frac{1}{2}$ inch trephine was applied over the seat of the scar. This opening was enlarged 3 inches. A tumor was discovered and removed. It weighed 3 ozs. 49 grs. Its size was $2\frac{7}{8} \times 2\frac{1}{2} \times 1\frac{3}{4}$ inches. Hæmorrhage was abundant and checked with difficulty. The wound was dressed antiseptically, drainage being provided for. The wound was followed by hernia cerebri. This showing no tendency to cicatrize, thirty-four skin grafts were applied. In ten weeks cicatrization was complete. The elevation was then followed by a concavity. The tumor proved to be a fibroma, a rare form of intracranial tumor.

Case 2.—Simple depressed fracture followed in four months by epilepsy; thirteen months later trephinement and removal of damaged brain tissue; recovery in seven days; cure of epilepsy to date. Young man 25 years of age. In November, 1886, he fell nine feet, receiving a severe blow on the right side of the head. He was unconscious for a considerable time. There was temporary loss of feeling in the three left ulnar fingers. On tapping the head on the right side he produced a "cracked pot" sound. Epilepsy began in March, 1887. Up to April he had had five positive attacks. The diagnosis was traumatic epilepsy from depressed fracture, centre for left hand and supramarginal gyrus involved. Operation was done April 12, 1888. As soon as the flap was raised the bone was found to be splintered. A $1\frac{1}{2}$ inch disc of bone was removed. The dura mater had been ruptured. A small piece of bone had been forced through the dura mater and had become adherent to its under surface. The brain substance had also been ruptured. A cyst $\frac{1}{4}$ inch in diameter was found connected with the piece of bone. All of the brain substance that was altered in character was removed. This piece was $\frac{1}{4}$ inch long by $\frac{3}{4}$ inch in width. The button of bone was perforated and attached with chromic catgut to the flap, so that the bone could not fall in upon the brain substance.

The wound was healed in seven days. After the operation there was paralysis of the hand as regards flexion. That night flexion was recovered.

Note made May 28, 1888, shows that the disc of bone is adherent, mental and physical condition excellent, flexion of fingers normal. The iris of the right eye, twenty-four hours after the operation, responded separately as well as its fellow. This isolated symptom of want of proper

reaction of the right iris is probably a new observation, and may be valuable in the future in determining and better localizing the right centre. In this case there have been no epileptic attacks since operation. In the first case there were several attacks during the past summer.

Case 3 was one involving the removal of the centre for the left hand and wrist. The operation was followed by recovery.

The patients were presented.

SECOND DAY—MORNING SESSION.

DR. HUNTER MCGUIRE, of Richmond, Va., read a paper on

THE FORMATION OF AN ARTIFICIAL URETHRA FOR PROSTATIC OBSTRUCTION.

He said: It has been my lot to meet with a number of cases of hypertrophy of the prostate gland, which produces more or less obstruction to the passage of urine. These are conveniently divided into three classes:

1. Cases where the obstruction was due to temporary congestion of an already enlarged gland, which yielded to the ordinary treatment and did not return.

2. A class of cases where the obstruction to the passage of urine was permanent but not great. Attention to the general health, the occasional introduction of the catheter and washing out the bladder were all that the cases required. These cases are, however, never free from danger from exposure, etc., and gradual enlargement may go on and bring about the condition met with in the third class.

3. In these cases the obstruction is great and fixed, micturition is frequent and difficult, perhaps impossible without the aid of the catheter. The introduction of the instrument grows more and more difficult, offensive residual urine is always present, and the general health suffers greatly. Cystitis, localized or general, is a painful and pronounced symptom. Violent tenesmus of the bladder, provoked by the obstruction, injures the vesical ends of the ureters, possibly a reflux of stale urine is driven into these canals and ureteritis follows, then pyelitis and pyonephrosis, from which the patient dies.

The paper was devoted to a consideration of surgical interference in this third class of cases. He was led to resort to the measures described from the following circumstances: During the past eight months four cases of stone in the male required the suprapubic operation; two because of organic stricture; one because of the large size and hardness of the two calculi the bladder contained; the fourth because the stone was large and hard and the patient too anæmic to bear the shock and loss of blood which often accompanies section through the rectum.

In one of the cases of stricture, in a man 65 years of age, the patient had, two years before coming under observation, a second cause of obstruction. A well organized stricture was found in membranous portion of urethra. Prostate was enlarged, more marked on the left side. Urine showed no evidence of renal disease. An oxalate calculus $\frac{3}{4}$ inch in diameter was also recognized. The high operation for stone was performed. The bladder walls were found thick and unyielding, and contracted. The left side of the gland jutted into the bladder $1\frac{1}{2}$ inches further than the right side. The middle lobe was of the size of the thumb and almost completely closed the urethra. It was decided to retain a fistulous opening through which urination could take place. This tract was $2\frac{1}{2}$ inches long and extended upward and forward. In its passive state it was closed by the pressure of the parts through which it passed. When the bladder became full and contracted the urine was forced through the fistulous tract. He can now retain water for two or three hours, and has voluntary power both to retain and expel urine.

The second case was a man 69 years of age who had been cut for stone in 1881. In 1883 I found the prostate enlarged and cystitis present. He was given a gum catheter and shown how to use it. In 1886 electrolysis was employed without success in trying to reduce the size of the prostate. July 4, 1888, an operation similar to that performed in the first case was done, with equally good results. At times he is able to retain urine for six hours. He never has any desire to empty the bladder, no matter how full the organ is.

Mode of Operation.—The night before the operation the bowels are opened. On the day of operation 15 to 20 grs. of quinine are administered. Antiseptic precautions are adopted throughout. The bladder is washed out with a weak solution of carbolic acid in hot water. An empty gum bag capable of holding 12 ozs. is passed into the rectum. About 12 ozs. of water are then introduced into it. This pushes the bladder above the pubes. The bladder is next filled with a hot solution of carbolic acid. The use of force should be avoided. The penis is tied with a piece of rubber tube to prevent escape of the fluid. A vertical incision is next made, beginning 3 or 4 inches above the pubes and extending to the symphysis. This extends to the linea alba. The incision in the latter should be from $\frac{3}{4}$ to 1 inch shorter than that through the skin. When the transversalis fascia is reached it should be divided, but not for more than 2 inches, but should reach to the pubic bone. The fat and cellular tissue between the transversalis fascia and bladder is separated with the handle of the knife; this tissue should be disturbed no more than necessary. The bladder is now drawn forward with a tenaculum and opened as low down as possible. The interior of the or-

gan should be carefully explored with the finger.

Sutures should now be applied, extending down to but not including the recti muscles. The opening left in the skin should be at the upper extremity of the wound, so that the fistula will be oblique and from $2\frac{1}{2}$ to $3\frac{1}{2}$ inches in length. A catheter is passed through this opening. If the catheter causes annoyance it may be at once removed, otherwise it is better to allow it to remain a few hours. The dressing consists of a pledget of absorbent cotton changed as often as necessary. In none of my operations have I met with the peritoneum.

In the after-treatment it is important to keep the urine acid, for acid urine is aseptic. In operating on these cases and in the high operation for stone, the amount of blood lost has not exceeded 2 drachms.

DR. JOHN H. PACKARD, of Philadelphia, read a paper on

SUPRAPUBIC CYSTOTOMY.

The present paper was supplementary to one on the same subject read by Dr. Packard at the last meeting, and was intended to correct an accidental omission of the views of Sir Henry Thompson. These were now considered, extensive quotations from the works of this author being given. Two cases were reported, in one of which the operation was performed for the removal of a portion of silver catheter broken off in the bladder, and in the other for the removal of a piece of rubber catheter said to have been broken off several months previously. In this case a stone weighing 571 grs. was removed, in the interior of which was found the foreign body.

DR. S. W. GROSS, of Philadelphia, thought that Dr. McGuire was to be congratulated on having introduced a new operation based upon the mechanism of the bladder and the physiology of micturition—the formation of an artificial urethra in a new position. The various operations which had been performed for the relief of prostatic obstruction were next referred to. The operations of Harrison, Mercier, Bartimini and McGill were considered.

DR. WM. T. BRIGGS, of Nashville, thought that perhaps, in the cases reported by Dr. McGuire, a better result might have been obtained by the lateral lithotomy provided the stone were not too large to be removed by that route, for he had noted that after incision into the prostate the gland diminished in size, and after the wound had healed a catheter could be passed in cases in which its use was before impossible. The perineal operation allows of freer drainage. Under some circumstances the suprapubic operation is a valuable one. This is especially the case where the stone is so large that removal through the perineum is liable to produce serious injury of the soft parts. It is, however, often possible, through an incision in the perineum, to so break the stone as to per-

mit its removal. Every case should be studied by itself; in some one operation is the best, in others another is most suitable. All the circumstances of the case must be taken into consideration.

MR. REGINALD HARRISON, of Liverpool, said that there are two general methods of relieving obstruction due to enlarged prostate, one by attaching the gland through the bladder, and the other through the perineum. In his operation he makes a median or a lateral incision through the perineum according to circumstances. The obstructing prostate is next divided with considerable freedom and a drainage-tube of considerable size introduced. From this operation he gets good results. Perineal lithotomy is preferable to the suprapubic operation because the lateral incision gives sufficient room for all manipulations. It gives an ample opening for the removal of a stone of considerable dimensions. It also permits of the more or less permanent drainage which these cases require. He had also, through a perineal opening, used the perineal lithotrite with success. All methods of operation should be remembered and each employed in those cases where it seems indicated.

PROF. THOMAS ANNANDALE, of Edinburgh, had come to the conclusion that if an operation is to be performed for the relief of prostatic obstruction, the perineal operation is the best. This allows of examination of the bladder, permits drainage and probably causes a diminution of the hypertrophy. It enables you to occasionally remove a portion of the enlarged prostate when this assumes a pedunculated form. The speaker exhibited a rubber tube which he had found useful in cases of Harrison's operation, when a permanent tube is required.

DR. A. VAN DERVEER, of Albany, said that the testimony presented in his paper last year was in favor of the perineal opening so far as drainage was concerned. He had employed Harrison's operation in a number of cases and the results had been such as to impress him favorably.

MR. ARTHUR DURHAM, of London, emphatically endorsed what had been said in regard to operation of stone, that no one operation is applicable to all cases. It is a great mistake to be men of one method, especially in surgery. When we hear a man say that he treats all his cases of fracture in such a way, all his cases of stone in such a way, and all his cases of prostatic disease in such a way, he may be sure that such a man has a very small practice and experience, or else is deficient of proper discrimination. In cases in which stone in the bladder is complicated with enlarged prostate, the perineal incision seems to me to be better than the supra-pubic. He described a method of performing perineal lithotomy which is performed with satisfaction at Guy's Hospital. This consists in the use of a straight

staff, the groove extending to within one-third of an inch of its extremity. A knife with a straight back is passed through the perineum until it reaches the groove, then carried along the groove to its extremity and the point of the knife being held in close contact with the staff, the two are carried forward into the bladder, thus avoiding many of the risks of the operation as ordinarily performed. In concluding he referred to the great improvement of the Bigelow operation over the old method of crushing for stone. He had no doubt that this method render both lateral and supra-pubic lithotomy much more rare than they have been in the past.

PROF. HINGSTON, of Montreal, believed that the supra-pubic operation was one to be performed only in exceptional cases. These he classified as follows: 1. In those cases of stricture in which the obstruction cannot be overcome in time to relieve the patient of great suffering. 2. In cases of prostatic obtrusion, 3. In cases of tumors of the bladder which would interfere with the lateral operation. 4. In cases where the stone is too hard or too large to be removed either by lithotripsy or by lateral lithotomy. He had himself removed without injury to the soft parts, a stone weighing five ounces and five drachms.

SIR WILLIAM MACCORMAC, of London, had performed the operation of supra-cystotomy occasionally. He had never seen any untoward consequences and the operation seems to be devoid of all risk. He did not consider that drainage was necessary after this operation. The bladder empties itself freely and the drainage tube is a source of irritation.

DR. H. MCGUIRE said that the only object of his paper was to describe the two cases in which he had made an artificial urethra to relieve prostatic obstruction. The various operations referred to were not applicable to all cases, while the formation of an artificial urethra could be done in all cases. He was surprised to hear that supra-pubic cystotomy was considered dangerous. It had the advantage of avoiding some of the unpleasant consequences of the lateral operation such as dribbling of urine and impotence.

DR. J. H. PACKARD did not want to be considered as an advocate of supra-pubic cystotomy. It had, however, been shown that the dangers attributed to this operation did not exist. He considered that the operation was a valuable resource in certain cases. After this operation he had noted diminution in the size of the enlarged prostate. This he attributed to the rest afforded the bladder. It will take place in whatever way the rest may be obtained.

THE PRESIDENT, DR. D. HAYES AGNEW, being called upon, said the ground had been so thoroughly covered that there was little to be added. He agreed with those who held that no single operation was applicable to all cases. The supra-

pubic operation may be appropriate in certain cases, while in others the perineal operation is the proper one. In order to avoid the unpleasant consequences which occasionally follow the perineal operation in children where the prostate is small, I avoid the introduction of the finger into the bladder and remove the stone with forceps not much larger than the staff.

While there may be no danger in the supra-pubic operation in skilled hands, yet with the inexperienced operator there will be risk of opening the peritoneal cavity. He thought that a number of cases had been reported of rupture of the bladder following injection of the organ after dilatation of the rectum with the rubber bag.

A paper entitled *Forty Years of Chloroform and Ether, in Louisville, Ky.*, by DR. D. W. VANDELL, of Louisville, Ky., was read by title.

The following are the

OFFICERS OF THE ASSOCIATION FOR THE ENSUING YEAR :

President—Dr. D. W. Cheever, of Boston.

Vice-Presidents—Dr. T. W. Richardson, of New Orleans, and Dr. John B. Roberts, of Philadelphia.

Secretary—Dr. J. R. Weist, of Richmond, Ind.

Treasurer—Dr. P. S. Conner, of Cincinnati.

Recorder—Dr. J. Ewing Mears, of Philadelphia.

Additional Members of Council—Dr. W. F. Peck, of Davenport, and Dr. S. W. Gross, of Philadelphia.

The next meeting to be held in Washington, beginning the second Tuesday of May, 1889. Chairman of Committee of Arrangements, Dr. J. S. Billings. Member of Committee of Arrangements, Dr. J. Ford Thompson, of Washington.

THURSDAY, THIRD DAY.

DR. GEO. W. GAY, of Boston, read a paper on
THE COMPARATIVE MERITS OF TRACHEOTOMY
AND INTUBATION IN THE TREATMENT
OF CROUP.

As to results, the conclusion was reached that the new operation saves nearly or quite as many patients as did the old.

In regard to the facility of doing intubation, it may, like tracheotomy, be easy or difficult, according to the age of the child, the condition of the larynx and the strength of the patient. Both operations are difficult in children under three or four years of age, and both are attended with some danger. In tracheotomy the risk lies principally in hæmorrhage and collapse. In intubation it lies in pushing membrane, etc., down in front of the tube, producing more or less complete obstruction. In very weak children collapse may result from prolonged efforts at placing the laryngeal tube. Under these circumstances the sur-

geon should choose the operation with which he is most familiar. The old operation can be done with one good assistant. Intubation requires at least two fairly good ones. Unless great care be taken the operator's fingers may be severely bitten, which, in at least one case, has resulted in death.

It is desirable to have a physician close at hand for three or four days after both operations. If the tube must be allowed to take care of itself, intubation is preferable. If ordinary care, such as a good nurse or other clever person can give, is available in cases located at a great distance from a physician who can place O'Dwyer's tubes, then the old operation is better, there being less danger of fatal obstruction, and the question of feeding giving less anxiety.

The weight of testimony goes to prove that it is less work to take care of intubated than of tracheotomized patients. The time occupied in caring for the tube in the latter class, is largely taken up in feeding the former class of patients.

Northrup's statistics of 107 autopsies performed at the New York Foundling Hospital, go to prove that there is no such thing as "food pneumonia," as in no instance were signs of food found in the smaller bronchi. Dr. O'Dwyer advances the opinion that the secondary lung affections, especially of pneumonia, are due to retained secretions which, owing to the pressure of the tube in either operation, can not be ejected in coughing. Others think that this complication is due to the fact that the air enters the lungs without first being warmed and moistened by passing through the nasal chambers. The author ascribes these affections to the natural tendency of exudative processes to extend in all directions, and bases the opinion upon the fact that pulmonary complications are as frequent in cases not receiving surgical treatment, run the same course and are as fatal as in those in which operation is resorted to.

While a wound in the skin is objectionable on general principles, yet the wound of tracheotomy gives little trouble and does little harm. The diphtheritic poison gains admission to the system before the wound exists, and the course of the disease as regards sepsis is the same after as before the operation. In only six of the 327 operations at the City Hospital of Boston was diphtheria in the wound noted; three of these cases recovered. Both tubes may produce ulceration in the trachea, but the result is seldom serious.

Conclusions.—1. Intubation may be tried in all cases of croup.

2. It is preferable in young children and in cases in which the tube must be left entirely to itself.

3. It may be resorted to for enthenasia, provided the operator is reasonably expert and can do it without producing collapse.

4. Tracheotomy is called for in those cases in

which intubation can not be done or in which it fails to give relief; or in which the laryngeal tube is repeatedly rejected, or requires frequent removal for cleansing. It may also be required in those cases in which sufficient food can not be given while the O'Dwyer tube is in position. It is also preferable in cases situated at a distance from a surgeon capable of introducing the laryngeal tube.

5. The tracheotomy instruments should always be at hand in intubation in case of emergency.

DR. H. H. MUDD, of St. Louis, said that intubation had been done as a precautionary measure in many cases in which tracheotomy would not have been thought of. Some of the good results of intubation are to be attributed to this fact. In most of his cases of intubation, where the patient survived he had found it necessary to resort to tracheotomy; patients had recovered after tracheotomy where intubation has proved unsuccessful.

PROF. THOS. ANNANDALE called attention to the value of the introduction of a tube through the glottis in case of operations about the throat where there was risk of suffocation or of hæmorrhage into the trachea.

DR. HUBER, of New York, had performed intubation in 94 cases with recovery in 37. He does not operate early. He considers the internal use of bichloride of mercury as of equal importance as the intubation. There is occasionally an advantage in using a small tube with the expectation that it will be coughed out, and with it a portion of the membrane, and affording an opportunity for feeding while the tube is out.

DR. T. F. PREWITT, of St. Louis, in one case of diphtheritic paralysis had, in order to avoid passage of fluid into larynx, passed a catheter through the glottis and plugged the larynx with a sponge. This permitted the fluid to go into the œsophagus without risk of entering the trachea. After feeding, the sponge and tube were removed.

DR. D. W. CHEEVER, of Boston, advocated the disuse of anæsthetics in cases of tracheotomy provided proper assistants can be secured. The operation is not accompanied with much pain. By avoiding the anæsthetic many of the risks of the operation are avoided.

DR. DEFOREST WILLARD, of Philadelphia, read a paper on

NEPHRECTOMY. 1. GUN-SHOT WOUND OF THE KIDNEY. 2. TUBERCULAR DISEASE OF THE KIDNEY.

Abdominal section was performed in the first case, but the patient died of loss of blood eighty-six hours after the injury.

In his remarks on this case Dr. Willard dwelt upon the advantages of abdominal incision, where the probabilities of other organs having been injured were so great; as hæmorrhage could be

averted, perforations repaired and escaped fluid removed. Drainage through the loin or abdomen was not advisable, provided urine had not escaped into the peritoneal cavity before the operation. The hæmatocele, if large and retroperitoneal, could not be thoroughly removed, and should therefore be allowed to remain undistended. All fluids in the abdominal cavity should be removed.

The three primary nephrectomies for gunshot wound thus far reported have all been done by Philadelphia surgeons. Keen (*Transactions American Surgical Association*, vol. v, p. 193), removed the left kidney of a girl of 18, in whom the ball had perforated the stomach, liver, spleen and kidney. This patient died on the fifteenth day. Price (*Trans. Penn. State Society*, 1888), removed the right kidney in a girl of 14, in whom the liver was also perforated. His patient recovered after multiple abscess of the liver. Dr. Willard's case died on the fourth day. In none of these cases was there anuria.

Case 2. Nephrectomy for Tubercular Kidney.—Female, æt. 32, married eight years but never pregnant. Tubercular history of ancestry uncertain. Failing in health for ten months; seven weeks ago first noticed tumor in right side of abdomen, has had increasing pain in this region, this is now very severe at times. Has emaciated rapidly. Temperature varying from 99° in the morning to 101° in the evening. Diarrhœa quite constant; passes large amounts of pus in the urine, urine $\frac{1}{6}$ albuminous, but contains no casts and no distinctive cell elements. Tumor, rounded in form, occupies the space from the right renal region forward to linea semilunaris, and vertically from lower margin of liver to line of anterior superior spinous process. Indistinct dulness extending into pelvis; resonance between liver and tumor, tumor movable.

Diagnosis uncertain as to purulent kidney or sarcoma of kidney. The size of the tumor and its projection forward determined the selection of the abdominal median incision. The right side of abdomen was found filled with thick sac, giving indistinct sense of fluctuation. From it extended downward two elongated masses, one evidently a pus-filled ureter, and the other a mass extending down from the external iliac vessels and passing under Poupart's ligament. Puncture evacuated only a few drachms of pus and did not diminish its size. Tearing open the sac, the kidney was found riddled with multiple abscesses. The vessels and the ureter low down were tied with silk ligatures and the kidney removed. The abdominal cavity was irrigated with distilled water, drainage-tubes inserted behind the uterus and into the site of the nephrectomy, and the wound closed with one set of sutures. The woman was exceedingly low during the operation, but rallied so that the temperature rose to 99° and she became perfectly conscious. Two hours after operation she suddenly sank and died.

Post-mortem examination showed that behind the suppurating kidney and in a separate sac, divided from it by a wall 3 lines in thickness, was another pus sac. This sac was 3 inches wide, and the pus had worked its way down the aorta, common iliac and iliac arteries to Poupart's ligament. If nephrectomy had been attempted this sac might have been drained and the kidney never reached at all. No hæmorrhage after operation. Death from shock. The other kidney was enlarged but not diseased.

DR. W. W. KEEN believed that blood exuded between the folds of the peritoneum was not a source of danger and that it might be left without interference. If we could make out that the kidney alone was injured the lumbar incision would be the proper one. Where there is a probability of injury of other structures the abdominal incision is the best.

DR. L. McLANE TIFFANY, of Baltimore, held that in simple gunshot wound of the kidney the proper plan was to drain the kidney through the lumbar region and not to perform nephrectomy.

DR. CHAS. T. PARKES, of Chicago, reported a case of gunshot injury of the abdomen, in which in addition to a number of perforations in the bowel the ball entered the kidney. The intestinal wounds were closed. No operative procedure was performed on the kidney. The patient died from hæmorrhage of the kidney twenty-four hours later.

DR. KEEN thought that in the condition referred to by Dr. Tiffany the proper plan was to drain, but where there is much injury of other parts the patient will stand a better chance if the wounded kidney is removed.

DR. ROBERT F. WEIR, New York: If there is simply a gunshot wound of the kidney, the organ should be thoroughly exposed in order to ascertain the extent of the injury. Then thorough drainage should be employed, and to guard against hæmorrhage the wound should be tamponed with iodoform gauze.

Obstetrical Society of Philadelphia.

Stated Meeting Thursday, September 6, 1888.

J. C. DACOSTA, M.D., IN THE CHAIR.

(Continued from p. 462.)

DR. H. A. KELLY reported

A CASE OF CÆSAREAN SECTION.

He operated April 17, of this year, delivering a living child and saving the life of the mother.

The patient a slight woman, 4 ft. 4 in. in height, had been in labor two weeks, her physician, Dr. Ireland, having watched by her bedside constantly for nine days previous to the operation. The waters ruptured four days before operation.

The estimated actual conjugate diameter was two and a quarter inches, although the pelvis was so choked by general œdema and hard cellulitis masses that it was impossible to recognize any structures with satisfaction, much less reach the presenting part of the child.

The patient's pulse at the time of operation was 142. The operation lasted thirty-five minutes. The after condition and convalescence was one of comfort and rapid recovery.

This makes the ninth case being operated on in Philadelphia, the first being by Professor Gibson in 1835, the historic case of Mrs. Reybold.

Dr. Kelly stated that he had since that time also operated upon another case for a relative indication, in preference to performing craniotomy upon a living child with the result of saving both mother and child; this question, however, of the relative indication was one of such importance, deserving such careful consideration, that he would reserve it for a more elaborately prepared paper at a future date.

DR. JOSEPH PRICE read a paper on

THE ABUSE OF CÆSAREAN SECTION.

On the legitimacy of the Cæsarean section, there cannot be now, under certain restrictions and limitations, a question. In extreme cases where hasty operation is necessary in order to save the life of the mother, where there is impaction or where there is a tumor blocking up the uterine or vaginal outlet, discussion or hesitation has little place, and he can operate best who has all resources at command and acts without hesitation.

The real points for discussion in the light necessity of the Cæsarean section, in order to terminate a labor, with greatest safety, first to the mother, then the child, are: first, "*The degree of contraction in the pelvis*;" second, "*The advancement of pregnancy*;" third, "*The chances for the induction of premature labor*." As to the first: As an epitome of the latest generally received opinion, we have the statement of Greig Smith: "The operation of Cæsarean section is said to be justifiable when the contraction is so great that we cannot expect to deliver the fetus per naturales vias, with or without embryotomy, and save the mother. The degree of contraction is generally stated as one and one-half inches and below. But in cases in which much distortion exists, may have an upward limit of two inches."

Here then is a plain expression of conservative opinion as to the degree of deformity necessitating or justifying the operation, "As to the induction of premature labor," says Playfair, "there are few practitioners who would not deem it their duty to spare the mother the dangers of the Cæsarean section," this being especially true since "there is no amount of deformity, however great, in which we could not succeed in bringing

on miscarriage by some of the numerous means at our disposal."

The time at which premature labor should be brought on varies, of course, with the degree of deformity of the pelvis; the tables of direction have been admirably constructed by Kiwisch. Briefly, the period for induction of labor lies between the 30th and 36th weeks, and the corresponding sacro-pubic diameters vary between 2 inches and 6 lines and 3 inches and 5 or 6 lines. Here, then, naturally follows a discussion of the means for inducing premature labor. Of the many methods proposed at different times, the one seemingly the best is the soft catheter. Its introduction well into the uterus, for a distance of six or seven inches, is an almost certain means of speedily producing labor pains safely.

I consider the British rule, that Cæsarean section should never be an operation of selection, but one of necessity, in general terms, as the safeguard of puerperal women. Once establish the precedent that Cæsarean section is an elective procedure in obstetrics, and thereby lay down also the principle that abdomino-uterine section is a safer procedure than the introduction of a soft catheter into the uterus before full term, the way is laid open to every aspirant for obstetric fame, who is the fortunate possessor of a knife, to find cases for his zeal at every court and corner in the city, if perchance he can, of himself, persuade the parturient woman of the necessity of delivery by "*the new natural method of delivery*."

An axiom as to the operation is laid down by Lusk: "The precise limits at which the dangers of delivery through the pelvis rise to the level or exceed those from Cæsarean section, is not easy to determine. It depends partly upon the size and ossification of the child's head, and largely upon the experience and dexterity of the operator." The converse of this proposition is true also. The greater the experience and the more careful the observation of the operator, the less frequently will he be led to resort to Cæsarean section, if he hold in mind that it is an operation of necessity, not of election.

Two cases will illustrate the dangers here referred to, and the justness of these forebodings.

Case 1.—A woman already delivered of a living child, yet living at four years. Three other deliveries at term with the forceps. All of these children dead. No attempt at premature labor. In the fifth pregnancy she is decided upon as a case for Cæsarean section. She passes into the hands of another attendant, who, after careful pelvic measurements with a consultant, decides on premature labor. The woman delivers herself, without instruments, of a child whose head has a biparietal diameter of $3\frac{1}{4}$ inches, the period of gestation being $8\frac{1}{2}$ months. The previous measurements of the pelvis having decided upon an antero-posterior diameter of $3\frac{1}{2}$ inches.

Case 2 is an actual operation. A woman in third pregnancy. First child delivered after 30 hours' labor, with instruments, dying soon after birth. Second pregnancy, she delivered herself of a child of normal proportions, at full term, without instruments. The child yet living. Third pregnancy, Cæsarean section. Recovery after protracted convalescence; child still living. Here are lessons full of instruction. What do they teach?

DR. M. PRICE thought that the duration of labor had nothing to do with the choice of Cæsarean section. He had delivered a woman two weeks since, who had been in labor seven days. It was an occipito-posterior position, and the cervix did not dilate more than enough to permit the introduction of two fingers. He introduced his hand, dilated the os, and applied Simpson's forceps. The delivery occupied an hour and a half, but the woman made a good recovery. Had the case been delayed a few days longer there might have been a necessity for Cæsarean section. Where there is an inflammatory or œdematous condition of the pelvis, he thought there should be some forcible measure adopted for the delivery of the patient.

DR. W. M. GOODELL thought that the title of Dr. Price's paper was not a fortunate one, for the gentlemen who are called upon to perform Cæsarean section are usually not the attending physicians, and they have had nothing to do with the previous medical attendance on the patient. He believed in the induction of premature labor, and would do it in preference to the performance of Cæsarean section. But often the patient herself will not submit to the induction of labor. Dr. Price would probably admit, one day, into the "Retreat," an Irish woman who has had the most frightful labor, and who had persistently refused, from conscientious motives, to permit the induction of labor. He could conceive of cases where it would be better to perform Cæsarean section, although he had never as yet done so. Probably in some of the cases in which he had formerly opened the head, he would now do Cæsarean section. He thought a woman might go on safely in labor for an indefinite time, so long as the bag of waters had not ruptured, with very little danger to herself.

DR. H. A. KELLY remarked that the bag of waters had ruptured four days before the operation. The pains had been very hard before this time, and did not change in character afterwards, although the woman soon dropped into collapse. The pelvis was so choked by hard cellutic mass that it would have been impossible to dilate anything or reach anything above the mass. The second paper evidently referred to his case performed on a relative indication, in preference to craniotomy. That case he had not yet reported, reserving it for a full careful discussion. Where

any such garbled, distorted particulars had been hunted out he did not know, nor could he reply to criticisms offered in such a tone. His profession was his life, and he came here to impart and still more to receive information in a spirit becoming the dignity of the profession, and he would not make life unhappy by taking part in any miserable bickering.

DR. J. PRICE said that in a long experience in the Obstetrical Department of the Philadelphia Dispensary he had numerous cases of deformed pelvis and illy-developed women, some of them very young. He would simply call attention to two typical cases.

Case 1.—A case in which Dr. Eliot Richardson had five times done craniotomy or complete evisceration. This woman applied in her sixth pregnancy to the Philadelphia Dispensary and was assigned to Dr. Joseph Fox for induced labor—in a period of five years he had induced labor three times in this case, delivering by forceps and saving two children—one still-born.

Case 2.—Also a Dispensary case. Had in her five previous labors had the children destroyed. The sixth was provoked at eight months and two weeks, and she was delivered with forceps of a fine, large male child.

In a short experience at the Preston Retreat he had dealt with two cases of greatly contracted pelvis, in both of which Dr. Goodell had twice or thrice induced labor, delivering living children. Recently two cases were sent in for induced labor or Cæsarean section. The consultants determined on the induction of labor. Both cases terminated favorably, with living children—one of them was a forceps delivery, the other normal. These are only typical cases, but few of the many he could cite in his own experience. If Dr. Kelly was satisfied that the last case given in the paper was his second Cæsarean section, he was sure he was welcome to his knowledge, as no one would wish to lay claim to it.

DR. J. PRICE exhibited a specimen of a small male foetus, at about the third month, removed from a case of extra-uterine pregnancy. Patient healthy and twice married. There had been numerous attacks of pain. Recovery from operation was rapid. The following week he did an abdominal section on a woman who was unconscious and removed an extra-uterine pregnancy. She died twenty-six hours later. This was the sixth case of extra-uterine pregnancy which had developed in his practice in four weeks. One case he went into the country to operate and found the patient dead when he arrived. Dr. Formad told him that this was a very common result in his experience as coroner's physician.

He also showed a dermoid cyst, removed from a woman who has suffered from chronic peritonitis for years. Her physician had given her as much as a grain of morphia hypodermically, and had

sat up all night etherizing her to relieve her pain. She was greatly emaciated, with a rapid, feeble pulse, high temperature, and had been in bed for six weeks. Whole tumor enucleated, no ligatures required. Intestines separated and irrigated—glass drainage. This is the 9th day and she is rapidly convalescing.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Cancer Hospital—Economy of Sanitation—Enemas of Antipyrin to render Labors Painless—Saccharin as a Preventive of Ammoniacal Urine in Cystitis—Glycerine in Suppositories—Fatal Results of Erroneous Vaccination of Sheep from Anthrax in Russia—New Antiseptic Soap.

With a view of affording a few hours diversion and entertainment to the poor sufferers of the institution, a garden party has just been held in the spacious grounds of the well known Cancer Hospital in the Fulham Road. The band of the A Division Metropolitan Police was in attendance. Out of the seventy patients at present in the hospital nearly fifty were sufficiently convalescent to leave their wards and partake of the refreshments provided for them in the grounds. The hospital which is free, was founded by Dr. Marsden in 1851, and since then has given relief to 27,131 persons afflicted with cancerous disease. It has recently undergone great extension, and is now complete and capable of receiving upwards of 100 indoor patients. During the last year the total number of new patients was 1,715.

At the annual conference of public sanitary inspectors of Great Britain held at Brighton, Dr. B. W. Richardson contended that the advance of sanitation, notwithstanding the heavy expense entailed, had brought about a general improvement in public health, as shown by the death-rates, and at the same time had been brought about by the application of the true spirit of economy. The cost of prevention was one-third the cost of disease. In many ways sanitary efforts had been impeded by over-crowding, and it was incumbent upon the public authorities to secure increased space in order to alleviate the evil. Improved school premises had done its work in reducing children's diseases, and the same causes had followed improved barrack accommodation in the army.

A German practitioner has lately stated he has succeeded in minimizing, or even preventing entirely, the pains of childbirth, by the administration of enemata of antipyrin. In the case of one woman, with her first child, who had been in great agony for upwards of twenty hours, a single

injection per anus of about half a drachm of antipyrin to a few ounces of water, the pain ceased almost immediately as if by magic, although the uterine contractions continued without alteration or diminution, and the accouchement proceeded in an entirely satisfactory manner. He also records cases where one or two antipyrin enemata rendered premature labor absolutely painless. Another authority, Dr. Layel, of Marseilles, has met with the like success, in similar cases, by the employment of this drug. Equally satisfactory results have attended the administration of antipyrin in this manner in England, and consequently it is likely to be extensively employed. If it is really the fact that in addition to its other valuable properties, antipyrin is capable of doing away with the whole, or the worst of the horrible pains of parturition, an immense impetus will be given to the demand for this already very popular medicament. Thirty to thirty-five grains (two grams) is the quantity recommended for each enema, and even in very severe cases a second or a third injection, after a short interval, suffice to relieve the patient from all her pain.

Dr. James Little, in a paper upon "the value of saccharin in preventing the decomposition of the urine in cases of chronic cystitis, states that from his results it would appear, that although saccharin exerts no very marked effect in tubercular cystitis, or in other varieties of the disease not accompanied by alkaline urine, it had been employed with very beneficial effect whenever a highly ammoniacal state of the renal excretion was present. Saccharin in fact, appeared to act by neutralizing or diminishing the amount of free ammonia in the urine, whether this arose from stricture, paralysis or prostatic disease. The ammonia being kept down or extinguished by the drug, the affection then succumbed under the ordinary treatment. Dr. Little also bears testimony to the good effects produced by full doses of caffeine, combined with salicylate of sodium, in neuralgic and migrainous headaches.

The recent discovery that the injection of a minute quantity of perfectly pure glycerine would induce an action of the bowels, has given rise to the making of a new kind of suppository by a well-known firm. The suppositories are hollow cones made to contain exactly 15 grains of pure glycerine. One is said to produce the desired action of the rectum.

The death of 5,000 sheep in Russia through being under the vaccinal treatment of Dr. Gamaleia for anthrax, seems to have been due to an incomprehensibly stupid error on the part of an assistant. For anthrax the sheep are twice inoculated, the first lymph being mild and the second and last intensive. In each case the vaccine matter consists of one-eighth of a cubic centimetre. The first produces in the sheep a vaccinal fever of one or two degrees, insufficient to

kill a guinea pig or rabbit, but fatal to mice and other small rodents. The second and more intensive injection produces also a temporary vaccinal fever after which the sheep is impervious to plague. But this second vaccine administration without the first gives a fatal result in nearly all cases. The fatal result was the natural consequence of the vaccinator—an assistant, administering the second vaccine in the first place. Usually an interim of from ten to fourteen days is allowed between the two vaccinations.

Probably no living member of the Russian faculty, old or young, has accomplished within so short a career so much hard and tedious labor as Dr. N. F. Gamaleia. He first became a disciple of M. Pasteur in the early part of 1866, since when he has worked with an enthusiastic and unremitting energy in the pursuit of tangible results in germinal diseases, at the same time personally conducting the daily inoculatory courses for hydrophobia among the large numbers of patients from all parts of Russia, Turkey and Southeastern Europe. After matriculating at the Odessa University, he proceeded to St. Petersburg, where he received his doctor's degree. His vacations he spends in Strasburg, Vienna and Paris. After some further experimental operations during the present month, Dr. Gamaleia will go to Paris and London, probably about the end of October or early in November, when, in conjunction with M. Pasteur, convincing proofs will be given of the splendid successes obtained by his laborious researches.

The Duchess of Connaught has attended a St. John's ambulance for ladies in Poona, India, and has been awarded a certificate after, it is stated, passing a very satisfactory examination.

A new antiseptic soap is coming into use in some of the London hospitals, containing from 1 to 3 per cent. of biniodide of mercury (rendered permanently soluble by the presence of a little iodide of potassium). It is found to be a more powerful antiseptic microbicide than any hitherto known.

DOMESTIC CORRESPONDENCE.

A Case of Furuncle with a Singular History.

Dear Sir:—Clark, æt. about 27 years, came to my office June 28, 1888, accompanied by his wife. After prescribing for Mrs. C., the husband called my attention to a small tumor located on the upper lip near the line of the nose, about the size of a two-cent piece, which he stated had made its appearance a few nights previous.

From its sudden development, its rapid growth, its size and color, it was evident to my mind that it was nothing more than a small blind boil, and

I therefore prescribed for him accordingly. In the course of three weeks he again made his appearance, with his upper lip disfigured by several scars, marking the location where the boil had been. He stated that, a short time after leaving my office, a physician led him to believe that the small growth was a cancer, and required immediate removal.

The report of the operation was published in a local newspaper of this town, and reads as follows: "About five weeks ago a physician brought a patient to Dr. Woodward for the removal of an epithelial cancer situated on the upper lip and quite extensive in its development. Dr. Woodward decided that the best method of removal was by electricity. In the presence of two other physicians he performed the operation successfully and without drawing a drop of blood. The operation occupied only fifteen minutes. In ten days the wound was entirely healed and the cure perfect. The patient is now perfectly well."

J. F. JENKINS, M.D.

Tecumseh, Mich., September 21, 1888.

NECROLOGY.

Mary France Thomas, M.D.

Mary France Thomas, M.D., died at her home in Richmond, Ind., of dysentery on the 19th of August, 1888, aged 72 years. Her maiden name was Myers, and she was born in Bucks County, Pa., September, 1816. While still an infant her parents moved to Washington, D. C., and in 1833 thence to New Lisbon, Ohio, where she remained until her marriage. In 1853-4 she attended medical lectures in Philadelphia, in 1854-5 in Cleveland, and in 1869-70 in Indianapolis. In 1856, she with her husband and family removed to Richmond, Ind., which has since been her home and the field of her labors.

During the war she rendered special hospital service in Washington, Nashville and elsewhere, by appointment of Gov. Morton, and for about a year she was similarly engaged in Nashville under the direction of the Christian Association. For twelve consecutive years she was physician to the Richmond Home for the Friendless, and for about eight years she gave professional attention to the poor in one district of the City and suburbs by appointment of the authorities. In 1839 she married Dr. Owen Thomas, and in November, 1848, their third and last child was born, the husband at the time being in delicate health. When this child was 3 months old she resolved to study medicine as the most available means of supporting herself, her children, and her invalid husband. Her husband was her preceptor, and without neglecting any household duty or ma-

ternal obligation she prepared herself for college, and attended lectures as recited above. To accomplish this she overcame discouragements and surmounted difficulties that would have been impossible to a less self-reliant person; sustained by a conviction that her purpose was right and her labors in the line of duty, and the inspiration of the young mother found its justification and had its reward in thirty-two years of successful professional life, the fruits of which enabled her to properly educate her children and see them honorably settled in life, and until the end sustain her invalid husband who survives. She was a working member of Wayne County Medical Society and its president in 1887; presented a number of papers to the Indiana State Medical Society from year to year; and was a member of the American Medical Association.

Beside her active life as a physician, Dr. Thomas was a member of the Woman's Christian Temperance Union; of the Order of Good Templars; of the Prohibition Club; of the Woman's Suffrage Association; of the Board of Directors of the Home for the Friendless; and of the M. E. Church, and in each and every position was thoroughly imbued with the spirit, and engaged in the labor of the situation. In every organization of which she was a member she became president and an active manager of its concerns, and beside did yeoman's service in its ranks. One can but marvel how a woman not naturally robust could do so much mental and physical work.

Possibly there may be a margin for doubt, whether or not all the conclusions Dr. Thomas reached embodied the best practical methods for the betterment of the world in the line of her labors, but to those who knew her well there remained no shadow of doubt that she, in her own way, sought diligently for the true, and when she deemed it attained wrought with zealous assiduity to make it fruitful, but under all circumstances "with charity for all and malice toward none." It was significant of the dominant traits of her character continuing to the recognized limits of life, that in making arrangements in view of her rapidly approaching demise, she named six women to act as her pall-bearers, selecting two of her co-workers in the temperance field, two of her associates in the management of Home, and two colored to make her persistent sentiments of delight at the freedom, and her desire for the culture of the race.

J. F. H.

E. Williams, M.D.

Concerning the death of this distinguished member of the profession we copy the following from a recent Cincinnati paper. We are promised a proper biographical sketch of the deceased for our columns soon.

At a meeting of the medical profession held last evening at the Miami Medical College in response to a special call to take action on the death of Dr. Williams, Dr. John A. Murphy was chosen Chairman and as Secretary Dr. Robert Sattler, who has long been associated with the deceased. The following resolutions were adopted:

The death of Dr. E. Williams, the veteran and distinguished oculist of Cincinnati, deprives the ranks of the medical profession of one of its most useful men, and the community loses also a noble and unselfish friend of humanity.

As a man, he endeared himself by his cheery and genial disposition and his unselfish characteristics to his professional colleagues, both old and young, and no one more generously received the appreciation and gratitude of his patients.

As a physician, he was equally esteemed by the profession and the community for his untiring and energetic efforts to promote the advance of medical knowledge, and, in particular, of the department of ophthalmology.

Faithfully and zealously were his best endeavors and most assiduous energy devoted to this important division of the medical sciences. For a period exceeding thirty years he was active as a specialist, and devoted all his attention and time to ophthalmology and otology. Justly does he deserve the credit and distinction of having been foremost among a limited number of men in aiding toward the introduction and establishment of ophthalmology as a recognized department of medicine and surgery in America.

Throughout this long period he has been constantly identified with medical education. His superior qualifications as a medical lecturer and teacher gave him unlimited scope of usefulness as a successful instructor, and gratefully will he be remembered by a countless number of students.

His unlimited capacity for practical work afforded him opportunities to aid in the alleviation of suffering, and, with unremitting attention, he assumed and discharged faithfully the arduous duties of a college, hospital and dispensary position. He was lavish—it may be even said reckless—in his offering to charity and poverty-stricken patients, but if he erred in giving his services gratuitously, it was only to carry out his desire to do good for the sake of good, reward or no reward.

The medical profession of Cincinnati herewith acknowledge their appreciation of Dr. E. Williams as a distinguished physician, and unite in their expression of sorrow and sympathy over the announcement of his death.

JOHN A. MURPHY,

W. W. SEELEV,

S. C. AVRES,

W. H. TAYLOR,

ROBERT SATTLER.

The faculty of Miami Medical College met last evening and adopted similar resolutions.

MISCELLANEOUS.

THE PEOPLE'S FOOD QUESTION IN SWITZERLAND.—The Swiss Society for the Promotion of the Public Good has addressed to all the Working Men's Clubs, Mutual Coöperation Unions, and Agricultural Laborers' Associations throughout the Confederacy, a circular inviting their support in the work of improving and cheapening the alimentation of the people. An important advance in this direction might, the Society urges, be made by the extension of the use of milk and cheese as articles of consumption. Strange as it may appear, such food—so satisfying, so sustaining, and, if properly produced, so accessible to the very humblest—has yet to be made the subject of special recommendation to the comparatively well educated, undoubtedly intelligent, and industrious Swiss. Yet such is the case; and accordingly we read of an appeal to all branches of the above Society "to arouse in the popular mind an interest in the matter, as well as to open up the ways and means of extending the consumption of milk and cheese." For the furtherance of this object, proceeds the circular, "the local branches are requested to establish courses of culinary and household instruction (*Koch und Haushaltungskurse*), with immediate reference to the wants and circumstances of the laboring classes. For the conducting of such courses the pupils of the culinary school at Reussport, near Lucerne, are qualified and licensed. As has been done in the Canton Aargau, these branches can, in all the cantonal villages, establish dépôts for the supply of genuine milk and unadulterated cheese, and, in cases where during the winter they furnish the poorer children living at a distance from the school with the midday meal, they can make the said meal consist mainly of milk and cheese with bread." The agricultural branches of the Society are reminded that they are in a position to exert a salutary influence on cheese-production, and especially to diffuse the making of its household varieties, which has recently been brought so near perfection. To the artisan branches, on the other hand, appeal is made to promote the consumption of cheese by rendering it as accessible as possible, and moreover, in the interests of their respective *clientèles*, to see to the purity of the milk concurrently supplied. This Swiss movement is one to which sanitarians nearer home might well give attention, and its results should be watched and noted by all who realize the daily increasing urgency of the popular food supply in all countries.—*The Lancet*, September 22, 1888.

HEALTH IN MICHIGAN FOR SEPTEMBER, 1888.—For the month of September, 1888, compared with the preceding month, the reports indicate that remittent fever, bronchitis and influenza increased, and that neuralgia, cholera morbus, cholera infantum, consumption of lungs and erysipelas decreased in prevalence.

Compared with the preceding month the temperature in the month of September, 1888, was much lower, the absolute humidity and the day and night ozone were less, and the relative humidity was slightly more.

Compared with the average for the month of August in the nine years, 1879–1887, intermittent fever, typho-malarial fever, consumption of lungs, tonsillitis, whooping-cough, diphtheria, neuralgia and cholera infantum was less prevalent in September, 1888.

For the month of September, 1888, compared with the average of corresponding months in the nine years 1879–1887, the temperature was lower, the absolute and relative humidity and the day ozone were less, and the night ozone was much less.

Including reports by regular observers and others, diphtheria was reported present at twenty places in Michigan in September, 1888, scarlet fever at twenty-four places, typhoid fever at thirty-five places, and measles at seven places.

Reports from all sources show diphtheria at seven places less, scarlet fever at one place less, typhoid fever at seven places more, and measles at the same number of places in the month of September, 1888, than in the preceding month.

FOUR CHILDREN AT A BIRTH.—DR. PARK P. BRENE-MAN reports, in the *Australasian Medical Gazette*, of August, the case of a woman in Sydney, N. S. W., who gave birth last April to four children at one birth. The children, with the exception of the fourth, were expelled head first; the fourth was born feet first. The labor was very short, there being but thirty minutes from the time the first child was born to the completion of the labor; ten minutes between each child. The children were all born alive, and lived from two to six hours and a half. They were as large as the average 5½ months' child, perfectly formed, and well nourished.

ADULTERATED MILK.—A dairyman near Melbourne was recently fined \$25 and \$15 costs for having sold milk containing from 9 to 12 per cent. of added water, and deficient in butter fat 23 per cent.

DR. WILHELM BIEDERMANN, of Prague, has accepted the chair of Physiology in Jena, vacated by the resignation of Professor Preyer.

THE INTERCOLONIAL MEDICAL CONGRESS of Australasia will be held in Melbourne in January, 1889.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from September 29, 1888, to October 5, 1888.

Major Henry M. Cronkhite, Surgeon, on being relieved by Capt. Corbusier, will report for duty to the commanding officer, Little Rock Bks., Ark., reporting by letter to the commanding General Div. of the Atlantic. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Capt. George W. Adair, Asst. Surgeon, is relieved from duty at Ft. Brady, Mich., and will report for duty to the commanding officer, Ft. Robinson, Neb., reporting by letter to the commanding General Dept. of the Platte. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Capt. William H. Corbusier, Asst. Surgeon, on being relieved by Capt. Taylor, will report in person to the commanding officer, Ft. Hays, Kan., for duty at that post, relieving Major Henry M. Cronkhite, Surgeon, and reporting by letter to the commanding General Dept. of Ariz. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Capt. Arthur W. Taylor, Asst. Surgeon, is relieved from duty at Ft. Robinson, Neb., and will report in person, without delay, to the commanding officer, Ft. Grant, Ariz. Ter., for duty at that post, relieving Capt. William H. Corbusier, Asst. Surgeon, and reporting by letter to the commanding General Dept. of Ariz. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

By direction of the acting Secretary of War, the following named officers of the Medical Department will report in person, on October 9, 1888, to the President of the Army Medical Examining Board, Army Building, New York City, for examination for promotion: Capt. Benjamin Munday, Asst. Surgeon; Capt. William O. Owen, Jr., Asst. Surgeon. Upon the completion of their examination to rejoin their stations. Par. 15, S. O. 225, A. G. O., Washington, September 27, 1888.

Lieut. Ogden Rafferty, Asst. Surgeon U. S. Army, will stand relieved from duty in connection with the Division rifle competition, the 7th inst., and under par. 6, S. O. 2, c. s., Hdqrs. Div. of the Missouri, will return to his proper station, Ft. Clark, Tex. Par. 5, S. O. 95, Hdqrs. Dept. of Texas.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, OCTOBER 20, 1888.

No. 16.

ORIGINAL ARTICLES.

THE EVOLUTION OF THE CYSTIC KIDNEY.

Read in the Section on Practical Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May 8, 1888.

BY I. N. DANFORTH, A.M., M.D.,
OF CHICAGO, ILL.

Synonyms.—Sacculated Kidney, Surgical Kidney, Pyonephrosis, Hydronephrosis

By "Cystic Kidney" I mean that condition of the organ in which it is more or less completely converted into a number of cavities, each cavity containing a fluid or semi-fluid matter, and possibly solid matter as well. The number of these cavities varies greatly, sometimes being limited to half a dozen or even less, sometimes reaching several hundreds. The size of the cystic kidney varies greatly: sometimes it is not enlarged at all; at other times it is enlarged to two or three times its normal dimensions.

The term "Evolution," although adopted as the title of this paper on the spur of the moment, seems to describe what occurs in renal cystogenesis most admirably, since it is really an "unrolling" or "unfolding" of the renal structure, as it slowly yields to the pressure of the fluid accumulating in the cysts.

It is the purpose of this paper to classify the causes of cystic kidney, and to briefly describe the mechanism by which each one produces its result. Of course in attempting to treat so large a subject within the time allotted to papers before this section much of detail must be omitted, but I think the essential facts can be stated without trespassing too much on your patience.

I think the causes of cystic or sacculated kidney may be classified as follows:

1. *Diathetic Causes*—with these varieties:

- a. Excess of saline elements of the urine.
- b. Tuberculosis.
- c. Carcinoma.

2. *Congenital Causes*.

- a. Floating kidney, with consequent twist of ureter.
- b. Congenital Hydronephrosis.
- c. Congenital degeneration of Glomeruli.

3. *Mechanical Obstruction* consequent upon disease of pelvic organs.

4. *Traumatic Causes*.

5. *Pathogenic Cysts*.

a. Dermoid.

b. Hydatid.

c. Cystic Metamorphosis.

1. Cystic kidney produced by "diathetic causes." By far the greater number of cystic or surgical kidneys occur during the active period of life, when the peculiar "diatheses" which lead to them are most likely to manifest themselves, and this is peculiarly true of the first group of cases—those produced by:

a. An "excess of the saline elements of the urine." In clinical experience we find that the "lithic acid" and the "phosphatic" diatheses are those which are most prolific of renal lesions, and their *modus operandi* is substantially the same. It is very easily explained. When assimilation and tissue waste are carried on in physiological proportion to each other—provided retrograde metamorphosis takes place in accordance with physiological laws—the urine is never "saturated" with solid matter, and no precipitation can take place in the renal tubules; but unfortunately these conditions do not always obtain. Certain grave departures from the normal course of assimilation and disassimilation occur, whereof the consequence is the super-saturation of the urine with saline elements. When this happens there can be but one result, namely, the saline elements, which are in greater excess, are precipitated within the lumen of the tubuli uriniferi, and mechanical obstruction of the invaded tubule follows. At first but a few particles of the given salt are thrown down, but these being angular or spiculate, easily insinuate themselves between the angles of the epithelial cells and thus become fixed at their point of lodgment. Two results now follow:

First, the foreign body, the saline particle, acts as a local irritant to the epithelial cells of the tubule, and they respond by entering into that pathological condition which we know as "cloudy swelling," which means that they enlarge and also that they throw off a glutinous secretion, which materially aids in obstructing the tubule; secondly, that the primary granule or crystal acts

as a point of attraction for other crystals, and thus a minute intra-tubal calculus is speedily formed. The tubule is now effectually occluded, but if the occlusion takes place below the convoluted portion, secretion of urine still goes on; meantime the tubule becomes inflamed, and then dilated, until a small cavity is excavated, which is filled by pus and urine, and the process of developing a multitude of similar cavities through the agency of similar causes goes on uninterruptedly, until the organ consists only of a series of cavities or excavations, from the size of a pin's head to that of a walnut, and we have the so-called "cystic" or "surgical" kidney. The calculi are not necessarily retained in the renal tubules; in point of fact, they are in most cases forced out of the tubules by the pressure of the urine accumulating above them, but not until the process of dilatation is well advanced, and the structure of the tubule is materially changed—so changed, indeed, that recovery is impossible. On the other hand, the calculi are not infrequently retained in the tubules, where they grow by accretion, until they acquire dimensions sufficient to produce deep-seated constant pain by their encroachments upon the renal tissues. In such cases the pressure of the calculi occludes many tubuli, and the result is at first a "multilocular" cyst, but later a single large cyst or cavity, because the intervening cyst walls are gradually broken down. Of late years many such cases have been radically cured by "nephrolithotomy," an operation which Henry Morris, of London, has done so much to establish.

b. "Tuberculous Kidney." Tuberculous disease of the kidney does not often occur, as a primary disease, although those who are much in the dead houses of our hospitals find occasional specimens. But whether the deposit be primary or secondary, its behavior is substantially the same. The tuberculous deposit is most common in the cortex, and generally each deposit clusters around some arterial twig. The artery thus isolated is gradually encroached upon, until its lumen is obliterated, and the blood supply of a small area is nearly or quite cut off. Hence, rapid disintegration of the involved tissue takes place, and the retrograde changes in the tubercle itself are hastened thereby. But meantime, the outlying connective tissue, true to its own instincts, has gradually increased, and has formed an impenetrable lateral wall against the escape of the softened and semi-liquid tubercle. There is now but one avenue of escape, namely, between the straight tubes which form the medulla, and project, as "papillæ" into the pelvis of the kidney. If the contents of the tuberculous cyst escape in this direction, we are likely to have a cone-shaped cyst, with the apex of the cone pointing towards the renal pelvis. But if the tuberculous matter remains imprisoned within

the cavity environed by the pathological connective tissue, we shall find a "cyst" or walled cavity filled with a putty-like or mortar-like material, which consists of tubercle corpuscles, pus cells, renal debris, and a sandy or gravelly "gritty" material, which represents the precipitated saline elements of the urine. Occasionally resorption of the liquefied contents of the cavity takes place, a solid matter remaining, perhaps to be subsequently mistaken for a true renal calculus, which of course it cannot properly be called.

c. "Carcinoma." In the adult, carcinoma of the kidney is almost never primary, and it is a well-known clinical fact that secondary manifestations of renal cancer are by no means common. Moreover, when secondary cancer of the kidney does occur, it is not generally followed by cystic degeneration; nevertheless this does occasionally happen, and in the following manner.

Cancerous deposits in the kidney occur sometimes as infiltrations, sometimes as rounded nodular deposits. In the latter case, each nodule is shortly surrounded and isolated by a fibrous capsule composed of hypertrophied connective tissue. By this process, the cancerous nodule is gradually shut off from its blood supply to an extent at least sufficient to induce early and rapid retrograde changes, particularly fatty or mucoid degeneration. Hence, the solid cancerous nodule becomes transformed into a soft pultaceous mass, or even into a dirty yellow or grayish fluid. This generally finds its way into the pelvis of the kidney, and thence into the bladder. It sometimes happens that our first intimation of renal cancer comes from a profuse discharge of purulent or bloody matter per urethram, which signals the fact that a cancerous nodule has undergone degeneration, and then "tunnelled" its way to the renal pelvis, whence its escape is direct and easy. It must (of course) be apparent, that each cancerous nodule which degenerates and escapes in the manner indicated, will leave a vacant cavity, or "cyst," and that the number of such "cysts" is equalled by the number of broken down nodules. Primary cancer of the kidney is a disease peculiar to childhood, "before the fourth or fifth year" [Morris.] It is almost always of the encephaloid type, and sometimes attains enormous proportions. I have seen one case in which the cancerous deposit distended the abdomen to an almost incredible degree, while the alimentary canal, the liver, and other abdominal organs were compressed and crowded so as to be hardly recognizable. In this case there were numerous cystic cavities with fluid contents of a dirty gray color, which were probably produced by the breaking down of isolated cancerous masses in the manner, and for the reasons already set forth. It must be admitted, however, that cystic excavations in cancerous kidneys are rare as compared with such excavations from

other causes; yet they have occurred, and doubtless will occur again; hence they merit a recognition in our text-books and lecture rooms.

2. "Cystic Kidney produced by Congenital Causes."

a. Migratory kidney with consequent "twist," or doubling of the ureter. I use the term migratory kidney advisedly, intending thereby to include both the "movable kidney" and the "floating kidney," whereof the anatomical and pathological distinctions are now well understood, and it is not necessary to discuss them here. Nor does it concern us particularly whether we are dealing with "movable" or "floating" kidney, since they are both, and about equally, subject to the accidents which result in a distended or sacculated kidney. The liability of the ureter to become twisted or doubled depends very much upon the range and movement which the kidney possesses. If the renal pedicle is short, and the kidney is confined in the post-peritoneal ileo-lumbar space, the danger is quite insignificant, although it does, even then, exist; on the other hand, if the pedicle is long and the organ is situated between the peritoneal folds which are known as the "mesonephron," the range of movement must necessarily be extensive, and the danger of ureteral obstruction must be much greater. There are two methods in which stenosis of the ureter may occur in "migratory kidney." First, "when the kidney drops forwards or downwards, as after long standing or sitting, the course of the ureter becomes so deflected and curved upon itself that the urine cannot flow along it." [Morris.]

A moment's reflection will make this clear. When the kidney "drops downward or forward," so as to bring the pedicle "taut," the ureter is made to describe an acute angle which has the effect of collapsing it, and producing more or less complete temporary occlusion. Meantime the secretion of urine goes on, the proximal portion of the ureter and the renal pelvis are in turn distended, the papillæ are pushed back and flattened, the calices are dilated, and the process of the "evolution" of the cystic kidney is fairly under way. But in a short time, owing to changes in the position of the body, or manipulation by the patient or his surgeon, or possibly by the distending force of the accumulating urine, the kidney is replaced, the ureter is rendered pervious again, and the accumulated urine disappears. Sooner or later the same series of events occurs again and again, each period of occlusion adding to the renal dilatation already existing, until the kidney is literally converted into a globular cyst, sometimes quite distinctly lobulated. Such cases used to be mistaken for ovarian tumors, but owing to our general increase of knowledge regarding abdominal tumors and their diagnosis, it is not likely to occur again. The twisted ureter acts in a precisely similar way, ex-

cept that the dilatation of the kidney goes on quite slowly, because the twist is generally no more than is accomplished by half a revolution of the kidney, and is therefore more frequently amenable to spontaneous restoration than the collapsed ureter above described. It is a clinical fact that nearly every migratory kidney is found more or less dilated when the organ is examined post-mortem, and that many an abdominal tumor which was a source of perplexity to the patient and her medical advisers, has been thus explained. I think a dilated migratory kidney is more likely to turn out a hydronephrosis than a pyonephrosis—at least such has been my own observation. I am quite well aware of the fact that the movable kidney is not always congenital, but, entertaining the opinion that the exceptions are exceedingly rare, I think I am fully warranted in including this class of cases among those of congenital origin.

b. "Congenital Hydronephrosis." This rare and singular form of renal lesion is so seldom seen, that but few of us can speak of it from experience. Yet it must be recognized as one of the causes of cystic kidney. It depends upon some malformation of the kidney or its appendages. As Morris and Dickenson observe, in the majority of cases, both kidneys are involved, and the cause lies in some fault at the cystic outlet of the ureter. But this is not always the case, since unilateral hydronephrosis is well-known among the surgeons, and several cases are recorded. The malformation which produces hydronephrosis may be at the pelvic extremity of the ureter, as when a valve-like fold of membrane closes the pelvic orifice of the ureter; or by some abnormality of the ureter itself—an obliquity, contraction, or arrest of development; or by occlusion, partial or complete, of the cystic orifice of the ureter. Or some abnormality of the renal vessels in consequence of which the ureter is compressed, may be the apparent cause. When both kidneys are involved of course an immediately fatal result must be the consequence; but when the disease is unilateral, the child is in no immediate danger. I have now a case of unilateral hydronephrosis under my care, the patient being an otherwise healthy boy 20 months old. The tumor occupies a large part of the abdominal area, and is so hard as to suggest a tumor with solid contents, instead of a hydronephrosis. Nevertheless, several weeks ago, when he was first presented at my clinic at St. Luke's Hospital, I drew off 40 ounces of urine by aspiration, using strict antiseptic precautions; but the cyst rapidly filled again, and in a week or ten days seemed as large as ever.

c. "General Congenital Cystic Degeneration." At rare intervals an infant is born or is instrumentally delivered with an enormously distended abdomen, due to the fact that the kidney has

been converted into a "congeries of cysts," a process of general cystic degeneration. Such a case is recorded in the *Medical Record*, for Jan. 21, 1888, and a few similar cases are on record. They are regarded, and probably correctly, as a peculiar form of cystic degeneration of malpighian bodies, but occasionally the convoluted tubules appear to be involved. In other words, the functional or potential portions of the kidneys only seem liable to this form of degeneration, and even then the process probably begins during intra-uterine life. The results are that the kidney is converted into a vast number of cysts, varying in size from those almost too small to be seen by the naked eye up to those as large as a hazelnut; that by the growth of these cysts and their progressive distension the kidney is greatly enlarged, and the abdomen greatly distended. The disease usually invades both kidneys, and is frequently associated with similar degeneration of other organs.

3. "Cystic Disease of the Kidney Produced by Mechanical Obstruction Consequent upon Disease of the Pelvic Organs."

a. Diseases of the bladder. Any form of cystic disease which produces thickening of its wall or intra-mural infiltration, so as to partially occlude the orifice of the ureters, is capable of inducing cystic kidney. And the cystic orifice of the ureter is very easily rendered impervious. It will be remembered that the ureter before opening into the bladder, passes for some distance between the walls thereof; hence the cystic orifice of the ureter is diagonal or valvular, an arrangement which retains the urine in the bladder when once it has arrived there. But when the bladder is thickened and corrugated by inflammation, or invaded by morbid growths, the cystic orifice of the ureter is more or less completely closed by pressure, and the entrance of urine rendered difficult and nearly impossible. Under these circumstances the ureter, the pelvis of the kidney, and finally the kidney itself, yield to the distending force of the retained urine, and a retention cyst, often of enormous dimensions, is the result. The diseases of the bladder most likely to produce cystic kidney are inflammation, carcinoma, sarcoma and tuberculosis.

b. Diseases of the uterus and its appendages. I have lately seen a case of double hydronephrosis in a woman almost 40 years of age, whereof the only discoverable cause was a compression of the ureters by a much enlarged and prolapsed uterus. The cervix uteri was enormously hypertrophied, tilted up against the bladder and fixed in this position by adhesions, so that the ureters were constantly although not severely compressed thereby. The consequence was a partial retention of the urine in the renal pelvis, and the slow but gradual extinction of the kidney, until nothing of the renal structure remained except a thin layer of cortical structure just beneath the thickened capsule.

Malignant disease of the uterus not infrequently produces cystic distension of the kidney; tumors of the broad ligament generally cause more or less complete stenosis of the corresponding ureter; ovarian fibroids have been known to produce the same consequences, and pelvic cellulitis, especially when followed by extensive suppuration, is very likely to be followed by gradual closure of one or both ureters, and its inevitable results. In short, any pelvic disease which is followed by pathological new formations, or the dislocation of the pelvic organs, may produce compression of the ureter and cystic kidney.

4. Traumatic Causes. The traumatic causes of cystic kidney cannot be formally classified. Any injury of the kidney may result in cystic disease—but how and why we cannot always explain. For example, I have lately seen the case of a young man who fell down a rough and precipitous hillside, thereby receiving a severe injury of the right kidney, which was followed by pain, tenderness and hæmaturia. These symptoms shortly subsided and the patient regarded himself as quite well. Yet the kidney remained slightly tender; he had occasional but not severe attacks of nephralgia; and four years after the injury he died after nephrotomy, the kidney being an enormous multiple abscess. I have seen several cases of cystic kidney attributable to traumatic causes, although it is impossible to explain how an injury to an organ should set in operation that train of pathological events which result in a multiple cyst. This fact we must recognize in all its pathological, diagnostic and therapeutic bearings.

5. "Pathogenic Cysts."

a. "Dermoid Cysts." The dermoid cyst, so far as I am aware, has never been found in the human kidney. It has without doubt occurred. They have repeatedly been found in the kidneys of the lower mammalia, and there is no reason why they should not be found in man. On the other hand, reasoning from the standpoint of analogy, and having due regard for the teachings of the laws of pathology, so far as we understand them, we have every reason to believe that the dermoid cyst has invaded the human kidney and will do so again. Therefore I am of the belief that the dermoid cyst ought to be regarded as one of the forms of disease to which the kidney is liable, in spite of the fact that the opinion cannot yet be authenticated by experience.

b. "Hydatids." In the language of Roberts, "Hydatids of the kidney are comparatively rare; they are much less common than hydatids in the liver, and even in the lungs; but they are more frequent than hydatids in the other organs and tissues of the body." These cysts pursue in the kidney precisely the same course that they do in other organs, except the intestinal canal. That is, they become filled with echinococci by continuous endogenous development until a parent cyst of

large, and sometimes enormous proportions, is the result. But the echinococci never advance beyond the first stage of development, and their reproduction may be arrested; hence it follows that an hydatid cyst may remain in the kidney for years without exciting any pronounced symptoms, or involving their host in any imminent danger.

c. "General Cystic Metamorphosis." Although this is a rare form of disease, nearly all recent writers describe it and produce illustrative cases. The kidney—or generally both kidneys—are enlarged and transformed into a multitude of cysts, which range "from the size of a pin's head to that of an orange." (Roberts.) They contain a reddish or yellow limpid fluid, which is always highly albuminous, and contains epithelial cells much changed and degenerated by maceration. According to the best observations of the best observers, they are derived both from altered and degenerated malpighian bodies, and altered and degenerated segments of convoluted tubes.

The cause of this peculiar analogue of the congenital cystic kidney is but little understood, but it is probably of the nature of collagenous degeneration of the renal cells.

In conclusion, I have to express my regret that so much remains to be learned concerning cystic disease in general, and of the renal cysts in particular, and to add the hope that in the near future our knowledge will be more definite and accurate upon this as upon all other subjects which interest the working pathologist.

ABSTRACTS OF CONTRIBUTIONS TO TERATOLOGY.

DEFINITION OF TERATOLOGY. GIANTS AND DWARFS. CLASSIFICATION OF MONSTROSITIES. FOUR-LEGGED CHILD, J. MYRTLE CORBAN. SIAMESE TWINS. HUNGARIAN SISTERS. SOUTHERN NIGHTINGALE.

SOUTH CAROLINA TWINS, MILLIE AND

CHRISTINE. JOHN ALLEN. HER-

MAPHRODITISM. MISS EMILY

LAUNDRY, THE LOUISIANA

BEARDED GIRL.

BY JOSEPH JONES, M.D.,

PROFESSOR OF CHEMISTRY AND CLINICAL MEDICINE, MEDICAL DEPARTMENT TULANE UNIVERSITY, OF LOUISIANA; VISITING PHYSICIAN OF CHARITY HOSPITAL, NEW ORLEANS, LA.

DEFINITION OF TERATOLOGY.

The word Teratology, which we owe to Geofrey St. Hillaire, literally means the *Science of Monsters*, and in the present article we shall apply the term to the *doctrine of congenital deformities*. Teratology, in a scientific sense, constitutes a part of *Pathological Anatomy*, which comprises all the anomalies of the organization; those which occur during *intra-uterine* life are called *congenital*, and those which arise during *extra-uterine* life, *acquired*. What are commonly called *monsters* are most generally referable to the former; that, is to the imperfections of the primitive formation.

Teratology, therefore, as a department of Morphological Science treats of the deviations from the normal development of the embryo.

The term *embryo* is commonly limited in human anatomy to the ovum in the first three months of its *intra-uterine* life, in which it is still developing or acquiring the rudiments of its form; the term *fetus* being applied to it in the subsequent months during which the organism grows in the lines of development already laid down.

It is mostly in the first, or embryonic, period that these deviations from the normal life occur, which present themselves as monstrosities at the time of birth.

CLASSIFICATION OF MONSTROSITIES.

The most usual grouping originally suggested by Buffon (1800) is into *Monstra per excessum* and *Monstra per defectum*, and *Monstra per fabricam alienum*. But some writers have placed the more simple cases of excess and defect side by side, and separate the double monsters from the single; the theory of the former being a distinct chapter in Teratology.

The origin of monstrosities has been referred to two main causes:

1. To the original malformation of the germ.
2. To the subsequent deformation of the embryo by causes operating on its development.

It is evident that giants and dwarfs are not referable to the action of these causes, because in both forms of monstrosity nothing peculiar may be noticed at birth. The infant of the future giant may be small and well-proportioned, and that of the dwarf large and well-proportioned.

CAUSES OF CONGENITAL ANOMALIES.

1. Original malformation of the germ.
2. Deformation of the originally well-formed germ.
3. Diseases of the ovum and fetus.
4. Imperfect development of the fetus from some remote or unknown cause.

CLASSIFICATION OF MONSTROSITIES.

1. Malformation of the ovum.
 - (a). Molabostryoides.
 - (b). Separation of the placenta into lobes or cotyledons.
 - (c). The vesicles of the umbilical cord are separated near the placenta, and meet at a considerable distance from it.
 - (d). The umbilical cord too long.
 - (e). The umbilical cord too short.
 - (f). Absence of one of the umbilical arteries.
 - (g). Increased number of the vesicles of the cord.
 - (h). Persistence of the umbilical vesicle.
 - (i). Constriction of the umbilical cord.
 - (j). Umbilical cord too thick.

MALFORMATION OF THE FŒTUS.

- (A) Monstrosities produced by the arrest of development.

1. Non-closure of the anterior parts of the body: (a) fissure of the whole anterior wall of the body; (b) fissure of the thorax; (c) fissure of the anterior abdominal wall; (d) fissure of the pubic and hypergastric regions; (e) cervical fissure; (f) fissure of the face.

2. Fissure of the skull: (a) want of the brain and exposure of the whole basis of the skull; (b) the denuded surface of the *basis cranii*, occupied by a spongy substance instead of brain; (c) the surface of the *basis cranii* only partially denuded, a spongy tumor occupying the place of the brain; (d) the skull flat, but having an opening through which the brain protrudes, as a hernia.

3. Fissure of the back part of the body; (a) Hydrorrhachis, and spina-bifida.

4. Hydrocephalus congenitus.

5. Acephalæ, or foetus without a head.

6. Want and defective formation of the trunk—*acomia*.

7. Defective formation of the extremities.

8. Cyclopia.

9. Deficiency of the lower jaw—*monoia*.

B. MONSTROSITIES PRODUCED BY AN EXCESS OF DEVELOPMENT.

1. Foetus in foetu.

2. Double monsters—heteradelphæ.

3. Double monsters; (a) anterior duplicity; (b) lateral duplicity; (c) inferior duplicity; (d) posterior duplicity; (e) superior duplicity.

4. Triple monsters.

FOUR-LEGGED CHILD, J. MYRTLE CORBAN.

One of the most remarkable instances of monstrosity which has come under my observation is that of the four-legged child (infant), J. Myrtle Corban, examined by the late Professor Paul F. Eve and the writer, in Nashville, Tenn., June 16, 1868.

The following, Figure No. 1, represents the appearance of this monstrosity.



FIGURE 1.—Four-legged female infant, J. Myrtle Corban, from photograph taken in Nashville, Tenn., June 16, 1868, about twenty years ago.

The following description of the infant, J. Myrtle Corban, was prepared jointly by the late Professor Paul F. Eve and myself, June 16, 1868.

INVESTIGATION OF THE FOUR-LEGGED CHILD, J. MYRTLE CORBAN.

Nashville, Tenn., June 16, 1868.—The undersigned, in response to the request of a number of physicians and the relatives and friends of the unfortunate subject of this investigation, give the following testimony: The infant, J. Myrtle Corban, has four legs and two distinct external female organs of generation, with two external openings of the urethra and two external openings of the double rectum. The external genito-urinary organs are as distinct as if they belonged to two separate human beings. The feces and urine are passed (most generally simultaneously, particularly the urine), from both external urinary and intestinal openings, situated respectively between the left and right pairs of legs.

The head and trunk are those of a living, well-developed, healthy, active infant of about five weeks, whilst the lower portion of the body is divided into the members of two distinct individuals, near the junction of the spinal column with the *os sacrum*. As far as our examination could be prosecuted in the living child, we are led to the belief that the lower portion of the spinal column is divided or cleft, and that there are *two pelvic arches supporting the four limbs*, which are situated upon the same plane.

Photographs of this infant have been made by the advice and under the supervision of one of our number.

The reality in this case surpasses expectation, and we are of the opinion that this interesting *living monstrosity* exceeds in its curious manifestation of the powers of nature in abnormal productions, the celebrated "Siamese Twins."

JOSEPH JONES, M.D.,

Prof. of Phys. and Path., University of Nashville.

PAUL F. EVE, M.D.,

Prof. of Surgery, University of Nashville.

FURTHER REMARKS BY PROFESSORS JONES
AND EVE.

Josephine Myrtle is the third offspring of W. H. and Nancy Corban, aged 25 and 34, the wife being the senior by nine years. They are so much alike in appearance, having red hair, blue eyes and very fair complexion, as to produce the impression of their being blood kin, which, however, is not the case. Mrs. Corban is from North Alabama, had borne one child to a former husband, the child having dark coloring, and resembling mostly the father, who had black hair and eyes. Her three children are all girls, the one already alluded to, now 6 years old, another 3, and this *infant monstrosity*, now to be more minutely described, born the 12th of May, 1868, in Lincoln county, Tennessee, five weeks ago.

Mr. Corban is a Georgian, served in the Confederate army through the war, and was severely wounded in the right arm and left hand. The parents are in fair health, though the mother is *anæmic*. She recollects no fright or disturbance during her last pregnancy. The presentation was fortunately the head, which accounts for the preservation of the life of the child. It would be curious to speculate on the trouble which might have been produced had the feet or breach presented, while the result, in all probability, would have proved fatal to the infant, and possibly to the mother. Mrs. Corban says that there was nothing peculiar in the labor or delivery. When three weeks old the child weighed ten pounds. It now nurses healthily, is thriving well, and we saw it urinate simultaneously, between the *two pairs of labia of the two vaginae*, situated about six inches apart. From the crown of the head to the *umbilicus* measures twelve inches, and from this point to the toes of the right and left external feet, eleven inches. From the *umbilicus* up all is natural and well-formed; all below this extraordinary and unnatural. An inch below the navel is a mark of an apparent failure for a second one. There are four distinct pretty well developed lower extremities. They exist in pairs on both sides of the median line which resembles the cleft of an ordinary pair of legs; but here there are no marks whatever of *anus* or *genital* organs, and upon pressure we discover no *os coccygis* or *sacrum*. The outer legs of both sides are the most natural of the four (though the foot of the right one is clubbed), but are widely separated by the two supernumerary ones, which are less developed, except at their junction with the body, from which they taper to the feet and toes more diminutive, and which are turned inwards. One toe is bifid on the left extra inward extremity. At birth these extra legs were folded flat upon the abdomen. We are led to believe that there are *two uteri as well as two recti*; in fact that the pelvic organs are double. Of course a minute dissection would alone expose the true condition of these parts.

Should this infant reach maturity and the internal generative organs be double, there is nothing to prevent conception on both sides. The first difficulty will, however, be in her walking. The outer, or external legs, may be used for progression; the inner, or intumed ones, probably never. These might be successfully amputated at the knees, or higher up.

One of us recollects being in London, in January, 1830, at an exhibition of the Siamese Twins, when Sir Astley Cooper gave an opinion adverse to an operation with a view to separate them, but which has always appeared to us feasible and without much risk of *peritonitis*; an operation, too, which should undoubtedly be performed in case of the death of one of them, for no medical man believes in the vulgar impression that they

must die simultaneously. In the present case all surgical interference, is of course, out of the question, except that alluded to—removal of the extra legs.

Cases somewhat similar to the above have occurred and been described. Rokitsansky refers to two completely distinct bodies conjoined at their *ossa sacra* or *coccyges*, as in the well-known Hungarian sisters, Helena and Judith, born in 1701, who survived their twenty-second year.

Geoffrey St. Hilaire alludes to cases of a trunk with two heads, some even Janus-like, having four upper and four lower extremities.

The case, however, recalled most vividly by Josephine Myrtle, is that of Rita-Christina, well-known in Europe, and accurately described in this country years ago by Prof. Meigs. In this wonderful instance there were two heads, two necks, four arms, but only two legs; and was thus the reverse of our case. From the *umbilicus* down there was one well-formed child, but above this all the organs were double; in reality there existed two beings. The rectum and bladder were common to both, but all else in the trunk was double and distinct. One would sleep while the other played, etc., for they had *two spinal marrowes, two brains, two hearts*, but the last two occupied a common *pericardium*. Unfortunately, after surviving a little over a year, one sickened and died, when the other, then in health, instantly expired.

Rita and Christina were born in Sardinia, 1829, and described by Dr. De Michaelis, Professor of Surgery in the Royal University of Sassari, and lived eighteen months.

The late Prof. J. C. Warren, of Boston, first described the Siamese twins brothers, when purchased of their mother by Capt. Coffin and Mr. Hunter (joint owners), and brought to that city, in 1829.

The infant J. Myrtle Corban thus described by Professor Paul F. Eve and myself in 1868, appears to be one and the same individual as the lady described in the following extract from the proceedings of the Alabama State Medical Association, published in the daily papers of Montgomery, Ala., April 13, 1888:

"A wonderful case of deformity or freak of nature has come to light in Alabama, which is without a parallel in history. Dr. Lewis Whaley, of Birmingham, read a paper presenting the strange case to the State Medical Association April 12, 1888. The phenomenon is in the person of Mrs. Clinton Bicknel, a white lady who resides in Alabama. She is a perfectly double woman in body and lower extremities, having four legs, four feet, and two distinct sets of physical organs. Dr. Whaley was called to see this lady some weeks ago, and was nonplussed by her strange sickness and symptoms. He called in two other physicians to assist him in making a diagnosis of the case. They found that Mrs. Bicknel was in a state of pregnancy on one side only—the left side. They

found it necessary to produce an abortion, and she gave birth to a well-formed child. Sometimes, the doctors say, the lady suffers with diarrhoea on one side and constipation on the other.

"She was formerly Miss Josephine Myrtle Corban. At the age of 18 she married Clinton Bicknel, and is now 20 years of age. At present she enjoys good health. Photographs of the lady were presented to the Association."

From a letter of May 17, 1888, which I have recently received from Dr. E. H. Sholl, of Birmingham, President of the Alabama State Medical Association, I am informed that "the lady, Mrs. Bicknel, of Blount Co., Ala., is the Myrtle Corban of days gone by, *attractive in face, physically well, and able to attend to all her household duties.*"

SIAMESE TWINS.

The subsequent history of the Siamese Twins shows that the eminent surgeon, Sir Astley Cooper, was correct in his opinion adverse to an operation to separate them. The Siamese Twins died in 1874, at the age of 60. They were joined by a thick fleshy ligament, from the lower end of the breast-bone (xyphoid cartilage), having the common navel in the lower border. The anatomical examination showed that a process of peritoneum extended through the ligament from one abdominal cavity to the other, and that the blood-vessels of the two livers were in free communication across the same bridge. There are one or two cases on record in which such a ligament has been cut at birth, one at least of the twins surviving.

Twins may be regarded as the physiological analogies of double monsters, and from cases like the Siamese Twins, in which the monsters have come very near to being two separate individuals, there are all grades of fusion of two individuals into one, down to the condition of a small fragment or parasitic body in a well-grown infant, *fœtus in fœtu*.

If we refer Josephine Myrtle Corban to the class of *Heteradelfa*, or *double monsters*, in which one of the fœtuses is more or less perfect, and the other merely an appendix, it is difficult if not impossible to determine the original and perfect fœtus from the appendix. It looks rather as if, during the development of the blastoderm or ovum, there had been a true fusion or division of the spinal cord, of the intestinal tube, and of the genito-urinary organs.

I have recently examined the case of a white lad about 14 years of age, a native of Louisiana, who was supposed to have scrotal hernia; but I found upon careful examination no varicocele and no hernia, but instead three large, well-developed testicles.

In another case, a married man "*who had never had but one testicle*," I was called to see him in great pain, with rapid pulse and incessant vomit-

ing. The attendant physician had pronounced the case to be one of strangulated hernia, and was preparing to operate; to which procedure, however, the patient objected. Upon careful examination I found a hard tumor about 1 inch in length and $\frac{3}{4}$ inch in diameter, in the right inguinal region. By careful taxis, I brought the testicle out of the ring into the scrotum, and left the patient rejoicing in his possession of two testicles.

These facts illustrate the difficulty of forming correct conclusions in the absence of the most rigid examination. In the case of the infant J. Myrtle Corban, a rigid examination of the uterine and pelvic organs was impracticable.

The pelvis is one of the commonest regions for double monsters to be joined at, and, as in the head and abdomen, the junction may be slight or total.

The Hungarian sisters, Helena and Judith, (1701-1723) were joined at the sacrum, but had the pelvic cavity and pelvic organs separate. The same condition obtained in the South Carolina negresses Millie and Christine, known as the two-headed nightingale, and in the other recent case of the Bohemian sisters, Rosalie and Josepha.

South Carolina Negresses, Millie and Christine; Two-headed Nightingale.—I had the opportunity of examining these South Carolina twins during their exhibition in New Orleans, about the year 1869. There was evident fusion and decussation of the nervous elements of the spinal cord in the sacral region. Pressure, pricking or pinching of the lower extremities of either twin was distinctly felt by the other. This was not the case with the upper extremities. Impressions made on the hands, arms, head or neck of one twin were not felt or recognized by the other.

The following is an accurate representation of this interesting double monster, or female negro twins united at the sacrum.



FIGURE 2.—SOUTH CAROLINA TWINS, OR NEGRO
DOUBLE-HEADED NIGHTINGALE, "MILLIE
AND CHRISIE."

"Millie and Chrissie" were quite intelligent and sang some songs with good effect, and it was affirmed that they were but one being with but one common genital organ.

The Carolina twins, "Millie and Chrissie," were united by their lower lumbar vertebræ, sacrum and coccyx. There is a single anus and a single vulva, but two hymen and two clitorides, but very probably two vaginae and two uteri.

The Hungarian Sisters, Helena and Judith, had but one vagina, although the upper part of that organ was divided into two, and the two intestines met in a single anus, placed between the four thighs. The Bohemian sisters, Rosalie and Josepha, in whom there is a junction of the posterior wall of the pelvis, present apparently a single anus, but a double vagina.

The four-legged child, Josephine Myrtle Corban, and the South Carolina twins, Millie and Christine, may be referred to monstrosities or malformations by excess.

Two ova may be formed in one Graafian vesicle, for double-yolk eggs are well known; but there is no evidence to show that there would form a double monstrosity; thus Professor Allen Thomson found, on incubating a dozen of such eggs, that not one produced a double embryo, while Wolff observed two completely separate foetuses developed upon a single yolk. The arrival of two impregnated ova in the uterus at the same time, will probably give rise not to double monsters, but to twins, and their fusion seems almost impossible. Embryologists have thus been led to the opinion that monsters by excess depend chiefly on an error of development taking place in a single germ; and this idea has been supported by the fact that Allen Thomson has shown that in birds two primitive germs may be found in one yolk, and in one *area germinativa*; and in this way the most complete cases of double monstrosity can be explained. And in confirmation of this theory, the researches of Tireboullet may be cited. This observer has seen, instead of the single budding of the blastodermis, which is ordinarily developed into the embryo of the fish, two, or even three, buds marked off; and these, during the process of development, would meet at some point and in this manner produce distinct parts of embryos, when they are separate, whilst a corresponding region of a single organism only would be found at the point of junction. According to the mode and extent of the blastodermic buds, the monsters would vary; and so would be derived all the different varieties, from a duplicity of the face or head, the upper or lower extremities, to such extreme cases as those which we have cited, as the Hungarian sisters, the Siamese twins, and the Carolina twins.

The following case presents a remarkable blending of the male and female sex:

This singular and distressing case of malformation of the genital organs must be referred to an arrest of the development of the testicles during fetal life.

JOHN H. ALLEN, OF ILLINOIS.

Singular and Distressing Case of Malformation of Genital Organs.—The following curious case of malformation of the genital organs came under my observation during the past 10 years, and was brought before the medical class of the University of Louisiana.

J. H. Allen, aged 23, height 5 feet 7 inches, weight 150 lbs., native of Illinois, U.S.A. Dresses in male attire. Voice fine, like that of a woman. Face full and smooth, without any sign of a beard. Features resemble more nearly those of a woman. Mammæ larger than is usual in men, but smaller than those of women. Nipples small, well formed, with a distinct dark areola. No hairs around the mammæ or on the breast, which is smooth like that of a woman. With the exception of the pubes and scalp, the body is devoid of hair. The general form is that of an athletic masculine woman. Hips full, and wider than chest. Circumference around hips, $39\frac{1}{2}$ inches; circumference of chest during full inspiration, 35 inches; circumference of chest during expiration, 32 inches. Has a small, well formed penis, $\frac{3}{4}$ ths of an inch in length, and $1\frac{3}{16}$ ths inch in circumference, with glands, frænum, prepuce, and urethral opening. The patient discharged urine through this opening in my presence. Below the penis there is a slight swelling or fulness of the integuments with a distinct raphe or tramis, like that which divides the scrotum in men into two parts, extending from the anterior part of the anus to the extremity of the penis. Upon careful examination, however, no testicles can be felt on either side of the raphe, or within any portion of the fulness which corresponds to the scrotum. A careful examination by the introduction of the finger into the rectum, whilst firm pressure was made upon the abdomen above the pubes, failed in disclosing the existence of any body corresponding to a uterus. This examination, however, was not entirely satisfactory, on account of the fulness of the abdominal walls. Buttocks and thighs full and round. The upper line of the hairy pubes terminated abruptly, without any fading off in the median line, as in the male.

I gathered the following facts from this individual:

Father of John H. Allen a strong, healthy man, native of Boston, Mass.; mother a healthy, well-formed woman, native of Pennsylvania; parents have had nine children, eight of whom were well-formed; the eldest, a woman of 25, has had three well-formed children. The subject of this exam-

ination is the second child. The third child, aged 21, is a woman and married. The remaining children were three boys and three girls; and of this number one girl and two boys have died; one boy, 13 years of age, well-formed, living; two sisters, aged respectively 10 and 2 years, living.

The subject, J. H. Allen, has always been called Johnny, and was dressed as a boy from early childhood. Was not aware that there was anything peculiar in his organization until after the age of 12 years had been attained; upon one occasion, when swimming with a number of boys, it was discovered that he was not formed like a boy, and was called by his companions "a half boy and half girl." Attended school up to the age of 17, and since this time has followed the occupation of "bar-tender." Has been taken up by the police upon several occasions as a woman in man's clothing, and after being examined has been released as a "nondescript," but has always been compelled by the authorities to wear male clothing.

Prefers the male sex, never loved a woman, regards women as sisters; has loved a man devotedly, but always feared to divulge the passion. Loves the dress of a woman and despises that of a man. When insulted feels like crying, as is common with women. When traveling on the Mississippi boats has several times been approached by rough men, who threatened rape, declaring that Johnny was a woman in man's clothing. Upon one or more occasions has excited the jealousy of women, on account of the supposed attentions of their husbands. When acting with a stock company, in the character of a woman, the wife of one of the actors who played the part of lover to Johnny, was excited to violent jealousy.

When dressed in women's clothing neither men nor women ever suspect Johnny to be anything but what the dress and general appearance would indicate.

The condition of Johnny is most distressing; it is with great difficulty that a position or work of any kind can be secured or retained, on account of being suspected as a woman in man's clothing; and when traveling in strange places, or when walking upon the streets at night, is liable to insult and arrest. His most earnest wish is to be allowed to wear women's clothing, and to enter the stage as an actress.

As far as my inquiries extended, there has not as yet been any periodic discharge of blood from the urethra, rectum, stomach, or nostrils, which could be considered as connected with the menstrual function, although the patient described certain vague and uncomfortable feelings in the abdomen and certain periodic changes of the complexion and features.

The following figures 3 and 4 represent the body and thighs and genital organs of John H. Allen.

We have in this case of John H. Allen a strange

admixture of the male and female natures. The male character is represented by the minute but well-formed penis, whilst the form of the body, as shown by the photographs which I have caused

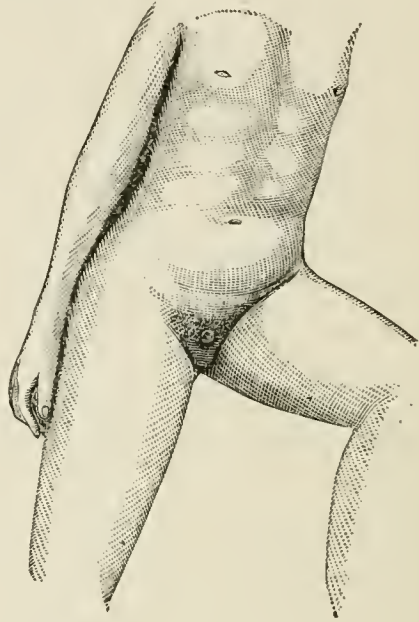


FIGURE 3.—JOHN H. ALLEN.

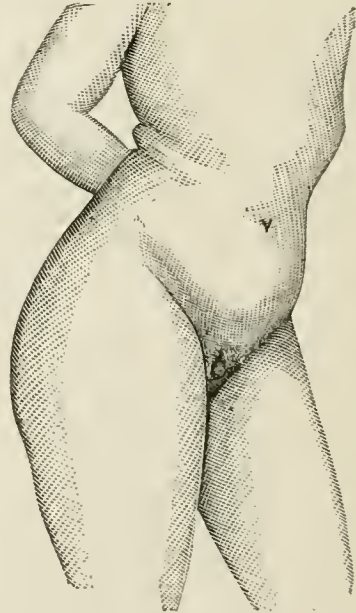


FIGURE 4.—JOHN H. ALLEN.

to be taken, approached more nearly to that of a female. The instincts were in like manner feminine. This case resembles a *hermaphrodite* in one sense, and in another a *natural eunuch*. In striking contrast to the case of John Allen we have the following :

MISS E. LAUNDRY, THE BEARDED GIRL OF
LOUISIANA.

This hairy and bearded girl was a native of St. Landry Parish, Louisiana, where she was born in the year 1873, and was exhibited during the last year to the public, accompanied by her mother, Mrs. Laundry. Her father, who still resides in Terrebonne Parish, is a farmer. Miss Emily Laundry was covered with a remarkably thick growth of soft light brown hair, from head to foot, and possessed a full beard of brown hair. Her upper lip was covered with a light moustache. Eyes brown, hair of head light brown and abundant.

The following is an accurate representation of Miss Laundry:



FIGURE 5.—Miss Emily Laundry, the bearded and hairy girl of Louisiana, 1887.

It will be seen that Miss Laundry, at the age of 13, when this photograph was taken, presented the appearance of a stout, plump, well formed young woman, well developed mammae and rounded hips.

Miss Laundry was well formed and well grown for her age. The preceding engraving represents her in the 13th year of her age, and shortly before her death, which occurred in Detroit, Mich., from diphtheria contracted in Minneapolis, April 20, 1887. The body was embalmed and shipped to New Orleans, where it arrived April 22, 1887.

Through the courtesy of the undertaker I was enabled to make a careful examination of the embalmed body, and found that the mammae and female organs were characteristic, and that with the exception of the beard, moustache, and excessive

growth of hair, she was what she was represented to be, a well formed young woman.

A relative informed me that Miss Laundry had menstruated at three years of age, and that when her mother was pregnant she constantly gazed upon an oil painting of Christ, whose face was represented with a full beard. The child was born with a beard, and the mother attributed this "freak of nature to the effects of the portrait of Christ." On her father's side many of the males were said to be characterized by an excessive growth of hair.

The singular case of John Allen may be referred to the class of *hermaphrodites*.

Under the head of Hermaphroditism, or Hermaphrodisism, may be included: 1st. Some varieties of malformation in which the genital organs and general sexual configuration of one sex approach, from imperfect or abnormal development, those of the other.

2d. Other varieties of malformation in which there actually coexist, in the body of the same individual, more or fewer of the genital organs and distinctive sexual characters, both of the male and female.

Hermaphroditism may be regarded as due to a failure of purpose, or to an uncertainty in the *nisus formativus* at an early stage of development. There is a period of time, following about the eighth week, up to which the embryo may develop either the reproductive organs of the male, or the reproductive organs of the female; in the vast majority of cases the future development and growth are carried out on one line or the other, but in a small number there is an ambiguous development, leading to various degrees of hermaphroditism, or doubtful sex. The primary indecision, so to speak, affects only the ovary or testes respectively, or rather the common germinal ridge, out of which either may develop; the uncertainty in the embryonic ridge sometimes leads actually to the formation of a pair of ovaries and a pair of small testes, or to an ovary on one side and a testes on the other; but even where there is no such double sex in the essential organs, as in the majority of hermaphrodites, there is a great deal of doubling and ambiguity entailed in the secondary or external organs and parts of generation. Those parts which are rudimentary or obsolete in the female, but highly developed in the male, tend in the hermaphrodite to be developed equally, and all of them in an imperfect manner. In some cases the internal organs of one sex go with the external organs of the opposite sex.

It is possible that in the case of John Allen the ovaries and uterus were developed partially, whilst the only representative of the male organs is the diminutive but well formed penis; hence the strange mingling of the male and female natures, the latter predominating in strength.

156 Washington St., 4th Dist., New Orleans, La., 1888.

THE TREATMENT OF SACRO-ILIAC TUBERCULOSIS.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY WELLER VAN HOOK, A.B., M.D.,
OF CHICAGO, ILLINOIS.

Time will not permit a discussion of the history, pathological anatomy, semeiology and diagnosis of tubercular disease of the sacro-iliac joint. The history of the study of the disease is intimately associated with that of "tumor albus" elsewhere, and affords a subject of corresponding interest. The semeiology and diagnosis are of importance not only on account of the fact that the disease has peculiarities of its own, but also because there are points of similarity between the signs of sacro-iliac disease and those of sciatica, Pott's disease, and especially of morbus coxarius, that may render its diagnosis exceedingly difficult, and perhaps in some cases impossible. The subject of the treatment of the disease, however, will be presented to you, as being perhaps of more general interest.

The clinical characteristics of tuberculosis at the sacro-iliac joint partake of all the general characteristics of tuberculosis of other joints. The sense of deep boggyiness over the joint indicating chronic inflammatory involvement of the deep structures, and cedema of the soft parts above are present here as well as in morbus coxarius. The loss of function, the pain on pressing the bones together, the tenderness over the joint cavity, the change in attitude, the tumefaction, and finally the sense of fluctuation yielded by fluid exudates are common here as in tuberculosis of the knee or ankle. In older cases in which cold abscesses have formed and have opened outward, we find fistulæ, running in a great variety of directions from the starting point in the joint itself.

But from the symptoms of the disease we must endeavor not only to determine its pathological nature and its seat, but also its clinical tendency. For upon this will depend not only our prognosis, but also our treatment. We cannot here pause to discuss the movements effecting this tendency. Suffice it to say that they are comprised under the heads of the resisting power of the tissues and the invading power of the microbes. The anatomical evidence of supremacy is, in the case of the tissues, cicatrix formation; in the predominance of microbic power, local extension of tubercular granulations, and often the formation of cold abscesses. But, while we have learned from Koenig and others that osteal granulation-mass foci have a general tendency to peripheral extension; that wedge-formed sequestrum foci chiefly tend to spread tuberculosis toward the base of the wedge; and that some cases of synovial tuberculosis tend to dry granulation, others to abscess formation, we must confess with regret that we

cannot clinically diagnosticate all of these pathological conditions, and hence cannot from these data determine the tendency of the disease. We are compelled, therefore, to limit our deductions, after locating the disease, to a determination of its tendency from a single symptom, viz., the presence or absence of cold abscesses; for if time permitted, it would be easy to show that the other symptoms are of little prognostic value.

Of thirty-eight cases of sacro-iliac tuberculosis with abscess formation that I have collected, only three have recovered without some sort of operative interference.

On the other hand, with the observance of hygienic laws, together with the application of complete mechanical rest, sixteen out of a total of seventeen collected cases without abscesses went on to complete recovery, the only death being due to an older suppurating tuberculosis at the hip-joint. If, therefore, under similar conditions, 92.1 per cent. of the cases with abscesses die, while 94.1 per cent. of the cases without abscesses recover, we are entirely justified in concluding that the abscess cases have a very strong tendency to a lethal termination, while the cases in which abscesses do not develop tend still more strongly to recovery.

But though the cases without abscesses tend to recovery, we have numerous examples to prove that cases originally devoid of abscesses can proceed, chiefly under imperfect treatment, to local extension, abscess formation, and eventually to death.

Again, the moist form without mixed infection—even where abscesses are present,—may end in recovery, as doubtless occurred in Hilton's case already cited, by resorption of fluid matter and encapsulation of the focal detritus. Instead of the fluid being resorbed it may be discharged externally, the original focus being enclosed as before in a scar.

Death occurs in the moist form from sapræmia or from septicæmia, due to mixed infection; from simultaneous or intercurrent local tuberculosis elsewhere, as in the intestines, peritoneum, and lungs; or from general miliary tuberculosis brought about by tubercular infection of the blood itself.

Previous to the period when radical operations came in vogue for the treatment of tubercular arthritis, the treatment of sacro-iliac tuberculosis was on a par with that of other joints. Erichsen, in his celebrated clinical lecture of 1859, describes the treatment as properly including, besides internal remedies, rest with counter-irritation during the period prior to abscess-formation and opening of abscesses by valvular incision when they are large and chronic. He distinctly stated that operative interference was out of the question. In 1853, however, six years earlier, Prof. L. A. Sayre, of New York, had operated on a

case in a child by opening the joint posteriorly and gouging out carious bone. The child recovered and grew to manhood. This case has not been published in detail, and was communicated to me by Prof. Sayre. So far as I can ascertain, it is the first case in which *évidement* was practiced.

The advice of Erichsen, however, was followed out almost universally; for the formation of cold abscesses was regarded as a symptom of most desperate import. This was not unnatural, inasmuch as radical operative interference was positively forbidden, and the eventual occurrence of mixed infection seemed inevitable, with its long train of septicæmic symptoms, finally ending in death. So great was the dread of mixed infection that, in the absence of occlusive antiseptic dressings, only valvular incisions were made to allow the tubercular matter to escape. Such incisions were generally sealed up with collodion.

It is only in the last five years that operators have begun to consider seriously the question of radical treatment of the disease, operations having been performed by Tiling, of St. Petersburg, in 1883, and two last year by Gant, of England.

Those statistics already referred to when speaking of the tendency of sacro-iliac disease, are of vast importance in determining the nature of our treatment. For if 94.1 per cent. of the cases without abscesses recover, we learn two important facts, namely: that the treatment under which these recoveries took place is well nigh perfect as regards mortality, and that it behooves us to endeavor, by all the means in our power, to prevent the supervention of abscess-formation, after which there are only 7.9 per cent. of recoveries without operation. The cases that give a favorable result were all treated by rest very carefully carried out. The sacro-iliac joint cannot rest when the weight of the body is imposed upon the ischial tuberosities, or upon the heads of the femora. Hence to secure absolute immobility the patient must lie upon the back. This was Hilton's treatment. Prof. Sayre makes a thorough canterization over the joint and uses extension. After a variable period, depending on the severity of the symptoms, he places his patients upon crutches, using a high heeled shoe on the sound side, and, to keep up extension, puts a heavy weight on the heel of the shoe used on the diseased limb. A diagnosis having been reached sufficiently early, these details of treatment certainly recommend themselves to us on account of the brilliant success with which Sayre has carried them out.

But when abscesses have formed, the treatment by rest alone has given such dismal results that we cannot wonder at the despair of Erichsen and many other writers, who regarded sacro-iliac disease as one of the most fatal in the nosological catalogue. Considering the number and variety of dangers awaiting the patient suffering from cold abscesses, we would be compelled to sanc-

tion even the most radical curative measures.

Sacro-iliac tuberculosis attended by abscess formation, I believe, admits of radical operation by no means grave in a very systematic manner, according to indications quite simple. The abscesses are compelled, by anatomical peculiarities, to pass either immediately into or out of the pelvis; that is, either anteriorly or posteriorly. This direction depends largely on the point at which the disease originated, whether at the anterior or posterior portion of the joint. Consequently, when we find originally intra-pelvic abscesses, we may justly assume that the anterior part of the joint is most likely affected; and when the abscess is extra-pelvic in origin, that the posterior portion is probably the seat of deepest involvement. Since we desire, especially in females, to do as little damage as possible to the healthy part of the joint, the problem is presented of reaching the disease, as far as may be, through comparatively unimportant soft structures. I propose two distinct procedures, according to these indications. The method of reaching the lesion when the abscess is *extra-pelvic*, is that practiced in the cases operated upon by Sayre, Tiling and Gant, namely, by simple incision over the joint, and *évidement* with the usual instruments. The operation may be performed systematically, as I have demonstrated repeatedly on the cadaver. A straight skin incision should be made from the lower border of the posterior superior spinous process of the ilium downward, that is, parallel to the spines of the sacrum, for a distance, in the adult, of about two and a half inches. If a sinus exist it should be enlarged with the sharp spoon, and if sufficient space is thus gained the operation may be completed without removing any bone except that which is diseased. If more space is needed it should be obtained by sub-periosteally removing, with a small chisel, a portion or all of the posterior inferior iliac spine, since access to the deeper part of the joint is more readily obtained by this process than by removal of part of the sacrum.

But when only *intra-pelvic* abscesses have formed, and we have reason to believe that the disease process lies chiefly in the anterior part of the joint, we must have recourse to the *second* procedure referred to, by which, if possible, the the posterior and sound part of the joint need not be disturbed. Now it must be remembered that the longitudinal axes of the auricular surfaces of the sacrum and ilium are directed antero-posteriorly, that is, almost perpendicularly to the flat surface of skin overlying the sacrum. Hence the broad expansion of the joint surfaces lies at a depth, in the adult, of two and a half to three inches from the surface. This surface may be reached as follows: The patient lying on the unaffected side with the thighs in exaggerated flexion, a longitudinal incision exposes the posterior *superior* spinous process of the ilium, from

which the periosteum and tendonous attachments of muscles are removed by dull instruments. With a pretty large chisel a piece of bone is now cut away from the iliac spine so as to allow the passage of the finger into the pelvis major, the inter-osseous ligaments having been divided by the knife. The anterior borders of the articulating surfaces are thus exposed to the touch of the surgeon, who, with the aid of a Volkmann's spoon with a long curved handle, can easily reach tubercular matter both in the bones and in the soft parts. Iodoform gauze acts as a sufficient drain.

This systematic operation was suggested by an operation done by myself, under the direction of Dr. Chr. Fenger, of Chicago. A man 32 years of age presented a "cold abscess" in the right iliac fossa, and another larger one between the crest of the ilium and the twelfth rib. For a number of reasons a diagnosis had not been made prior to the operation. The lumbar abscess having been freely opened and its walls scraped, a fistula was found by means of a probe leading downward and forward, in front of the posterior superior iliac spine into the pelvis, where denuded bone was felt. The chisel was used to remove a portion of the posterior superior spinous process of the ilium; the finger was then introduced into the larger pelvis, and the tubercular focus being located in the sacro-iliac joint, and exposed to the touch, no difficulty was experienced in removing it. The iliac abscess was drained and complete recovery ensued.

The points in treatment submitted to your further consideration are as follows:

1. *Where no abscesses have formed*, hygienic and general symptomatic treatment, with counter-irritation by means of the thermo-cautery where pain exists or improvement is slow, should be combined with complete mechanical rest, aided by extension.

2. *Where abscesses or their resulting fistulae exist*, cases should be subjected at the earliest practicable moment to a thoroughly radical operation by *évidement* performed posteriorly, that is, directly, when the abscess is extra-pelvic in origin; performed, as it were, from the pelvic side, whenever the abscess originates within the pelvis.

CHOREA OF THE SOFT PALATE,

CAUSED BY THE HYPERTROPHY AND HYPERÆSTHESIA OF THE MUCOUS MEMBRANE COVERING BOTH INFERIOR TURBINATED BODIES.

Read before the American Rhinological Association, at Cincinnati, Ohio, Sept. 12, 1888.

BY J. E. SCHADLE, M.D.,
OF ST. PAUL, MINN.

That the origin of not a few reflex nervous disorders can with a certain degree of exactness be traced to the presence of morbid conditions of the naso-pharyngeal cavities, is a question no longer

doubted. The observations of recent writers on rhinological subjects furnish us conclusive evidences that some forms of headache and of spasmodic asthma are in many instances the outgrowth of a nasal polypus, a turbinated thickening, or a septal deformity. The fact, too, is known that these reflex neurotic disturbances disappear soon after appropriate measures of treatment have been directed towards the removal of their cause.

The purpose of this paper is to call the attention of the Fellows of this Association to a case of choreiform movements of the soft palate appearing in a young lady whose family history is somewhat unusual, as well as remarkable, and whose affliction is without doubt phenomenal. The patient was referred to me by my friend, Dr. Baker, of this city, whose letter of introduction reads as follows:

"St. PAUL, Minn., April, 16, 1888.

"*Dear Doctor*.—This interesting case came under my care June 3, 1887. The only thing complained of was a constant contraction and relaxation of the levatores palati. Each contraction carried the uvula upward and backward till it came in contact momentarily with the upper and back part of the pharynx. The relaxation and separation of the moist mucous membrane surfaces caused the sound. The noise was like that produced by a rapidly ticking watch, and of the same frequency. It was never absent except during sleep. The young lady was in excellent health, all the bodily functions being well performed. My treatment was as follows:

R. Zinci bromidi ʒj.
Syr. simplicis ʒj.
℞ Sig. Ten drops in water four times a day, increase one drop each day until the dose nauseated.

"This not producing the desired result, I gave tr. physostigmatis in doses ranging from fifteen to thirty drops. After continuing this remedy for a time, I abandoned it and prescribed fl. ext. cimicifugæ rac., in doses of fʒss to fʒj, every four hours.

"About July 7, 1887, I began the trial of galvanism, used eight cells of McIntosh battery and placed the positive pole with a sponge electrode at the back of the neck; the negative pole with a metal-tipped electrode such as is used for the urethra, was applied to the palate just above the uvula. The sittings were of five to ten minutes' duration, and I increased the number of cells to eleven. At the second treatment movements ceased and did not return for several hours.

"After the fifth or sixth application the ticking stopped and did not return till the first of this month when she called on me. Examination showed enlarged tonsils, with evidences of throat and nose disease. Thinking the condition of the nose and throat caused a return of the choreic movements, and cure of same might permanently relieve, I now introduce her to you for examina-

tion and treatment. A singular feature of the case is that her general health had been almost perfect through all these years. Another item of note is that no other sets of muscles were involved.

Yours, truly,

J. F. BAKER."

In the *Archives of Otolaryngology*, Vol. xii, No. 1, March, 1883, this same case is reported by Dr. Cornelius Williams, a distinguished oculist and aurist of this city. In this article Dr. Williams says: "When Violetta was ten years old, having occasion to get up in the night, she lost her way in going back to her bed, and reaching her grandmother's room by mistake she laid her hands upon the aged lady in the dark, and so alarmed her, and was herself so much frightened by the grandmother's shrieks, that she almost went into convulsions. She refused to return to her own bed, but lay in her sister's arms, starting and sobbing, the night through. Next day she was extremely pale and nervous, nor did she recover her wonted spirits for a number of days. This happened in the Spring of 1880, and a short time after this the child discovered that a strange clicking sound was produced in her mouth, but suffering no inconvenience from it she mentioned it to no one.

"In the June following she fell into Lake Elmo (Minn.), and came near being drowned, and a short time after this she called the attention of her mother to the clicking, which had now become constant. The family medical attendant was consulted, who pronounced it as a common affair. The uvula was cut off entirely, and one tonsil was amputated without result as far as concerned the clicking. The patient is in good general health; appetite and digestion good; sleeps well. She is easily fatigued, but is kept up by any excitement. There has been for the last three weeks diurnal incontinence of urine, the act of micturition recurring about every half hour, but at night it is hardly ever necessary for her to get up more than twice. Dr. D. W. Haud, who was kind enough to examine her, informs me that there is considerable leucorrhœa, and that the urethra is unusually large and patulous. He explored the bladder and found no evidence of stone. The act of micturition is not painful. Drs. Hand, Boardman, Abbott, and Wheaton, examined her heart at my request, and report that there is nothing abnormal about it. Upon looking into the patient's mouth it is perceived that the velum palati is rapidly raised and lowered without being made tense in its entirety. At the moment of relaxation of the levatores a sound is produced which is as much as can be like the ticking of a small brass clock, and in a still room it may be heard at a distance of twenty feet. The clicking corresponds to a complete contraction and relaxation of the levatores palati, and by actual count is 120 a minute, with very little variation in frequency at any time. When the mouth is opened widely the azygos

uvulæ is sometimes seen to contract, but such contraction would seem to be physiological.

"The tone of the clicking is changed by closing the nose, and by otherwise altering the usual conditions of the mouth and nose as to the volume of air contained, but that, nor any other manipulation, procures the cessation of the noise or its cause. Laryngoscopic examination shows the larynx to be normal, save a slight congestion. Rhinoscopy is not practicable. Otoscopy reveals the membrana tympani of each ear slightly indrawn, the handle and short process of the malleus of the right being abnormally prominent. Light spot gone from both Mtt.

"By means of the 'diagnostic tube' I am able to hear the clicking sound in either of the patient's ears; more distinctly in the right. It may very well be likened to the ticking of a watch under a pillow, or the sound of the foetal heart. If there is any movement of the membrana tympani, I have not been so fortunate as to observe it. The girl's voice is natural, and she can sing with correctness, uttering the chest notes without difficulty, but is unable to produce head notes at all. In running the scale, a decided tremolo is remarked. The patient, of necessity, breathes through the mouth, and from habit keeps it open during sleep. When there is tonsillitis, to which she is subject, there is considerable drooling. At such times she is apt to have glottic spasm. The spasm of the levatores ceases during sleep. At irregular intervals, perhaps fifty or a hundred times through the day, there is an interrupted spasm of the diaphragm, giving rise to a sudden and deep inspiration in two or three motions, as in sobbing, followed by prolonged expiration. At times, it may be for an hour or half a day, she hears in her ears a sound comparable to the rapid revolution of a small fan-wheel. Acuteness of hearing normal."

With the above information relating to the previous history, we are brought to the present consideration of this singular malady, a condition which I prefer to speak of as choreiform movements of the soft palate:

In company with her mother, Miss V. Z. presented herself at my office for examination on the 16th of April, 1888. She is a decided brunette, 17 years of age. General appearance is good; tall and well developed. Seems to be of a cheerful temperament.

Menstruation commenced normally, the epochs occurring regularly up to the present time. Digestive organs in a fair condition; suffers from constipation and flatulency quite frequently. Urinary function normal. Heart's action more or less excited; the heart beats tumultuously when ascending a flight of stairs, a hill or some other elevation. Complains in a marked degree of obstructed nose-breathing; dry sensation of the pharynx, disturbed sleep, and incessant mouth-

breathing. Organization is of the nervous type; excitement affecting nervous system is not well borne. Voice is impaired, especially when attempting to produce head tones, as in singing. The principal affection complained of, and for which she was referred to me, is the spasmodic movement of the velum palati.

Of the family history, particularly that part of it relating to the father's side, much can be said which not only has a special bearing on the case under consideration, but also gives valuable information for the neurologist. A predisposition to melancholia and suicide, handed down from the grandfather to the present generation, seems to exist. The grandfather, a Hungarian by birth, and a school-teacher by occupation, shot himself at the age of 58. An aunt, 55 years old, drowned herself in 1885. She was married, and was the mother of five children, one of whom, a son aged 28 years, came to his death two years ago by shooting himself. Another son, still living, suffered from melancholia for some time after the tragic deaths of mother and brother.

Conrad, father of Miss Z., at the age of 46, drowned himself while suffering from a fit of insanity. It is said he was an intelligent gentleman and an accomplished musician. In July this year, a brother aged 28 died from the effects of carbolic acid, which he drank with a view to self-destruction; this being his second attempt at suicide. The mother is healthy. Aside from an ancestral strumous tendency, her family history is good.

A faucial examination reveals distinct rhythmical choreiform movements of the velum palati accompanied by a peculiar clicking sound, distinctly audible for a distance of 12 or 15 feet from the patient. The levators of the palate seem to be the ones especially engaged in the production of these involuntary muscular phenomena. The levators act in unison with each other, and volition has no control over their behavior. The mucous membrane covering the palate and adjacent structures is anæmic, and has adhering to it a glistening tenacious secretion which, by ordinary attempts, is difficult to remove.

The left palatal tonsil is larger than it should be normally, a condition due to frequent attacks of acute tonsillitis to which she has been subject since childhood. Only a remnant of the uvula is to be seen.

By an anterior rhinoscopic examination I find chronic hypertrophy of the inferior turbinated bones, and in a more marked degree, of the middle ones, the presence of whose redundant tissue exerts pressure on the septum and produces obstruction. Posterior examination with the rhinoscope brings into view unusual chronic enlargement of the pharyngeal tonsil. It is lobular and irregular in shape, and extends with its free extremity from a broad base in the vault to some

distance below the upper margins of the choanæ of the nose. Inspection of the posterior nares presents excessive chronic thickening of the pituitary membrane covering the posterior third of the inferior turbinated bones. That part of the nasal passages is almost occluded by this condition. The aspect of the septum posteriorly is thin and pale.

There is an important feature entering into the history of this case which must not be overlooked. I refer to the extremely hyperæsthetic state of the intra-nasal mucous membrane. Mackenzie's sensitive areas are prominently characterized by it. Even the margins of the nostrils sympathize in this respect with the mucous membrane lying beyond them. The presence of a speculum causes a disagreeable feeling and creates nervous irritation. The use of the probe in the chambers of the nose is utterly intolerable; contact of it with any portion of the membrane, and, more particularly with the posterior part of the inferior turbinated bones, at once gives rise to violent sneezing and spasmodic coughing. A flow of tears invariably follows these manipulations.

Treatment.—My treatment was mainly surgical. The first impression entertained was, that possibly the enlarged pharyngeal tonsil might have been a source of the trouble, and that a thorough removal of it would do away with a foreign element constantly coming in contact with the opposing surface of the velum palati, and exciting thus into action clonic spasms. Snaring was impracticable.

I therefore, by the use of Cohen's post-nasal cutting forceps, and of the electro-cautery, reduced the growth in its entirety. This procedure was ensued by cessation of the choreiform movements which remained absent for a period of two weeks, when they suddenly returned during a spell of nervous excitement from which the young lady was suffering.

My attention was now turned to the treatment of the nasal passages. The pathological changes found in them offered a theory for a reflex cause of the affection. Cocainizing the intra-nasal mucous membrane generally produced relief for half an hour. With a view to reduce the hyperæsthesia and hypertrophy of the turbinated bodies, I employed the electro-cautery, thoroughly burning the affected parts. An immediate result took place; the trouble at once ceased. Two cauterizations were necessary to effect entire perviousness of the nostrils and overcome obstructed respiration of the nose. Nose-breathing displaced mouth-breathing, and the dry sensation and sticky secretions of the pharynx gradually disappeared. The patient soon showed improvement in other respects.

The functional derangement of the heart and shortness of breath passed off, while the general

nervous system also gained tone. She also can now speak and sing with a clearer voice, the head tones improving daily.

Beyond a doubt a cure has been produced, the permanency of which already having been severly tested.

The melancholly death of her brother by suicide, mentioned in the family history, having occurred in the meantime, in itself was sufficient to reproduce the disturbance in consequence of intense emotional excitement into which she was thrown at the time. Upon receiving the news she was immediately seized by a violent attack of hysterical laughing which continued uninterruptedly for at least an hour. From this condition she passed for a few minutes into general muscular twitching. The velum palati, however, remained then as well as until now perfectly quiescent.

Etiology.—The choreiform movements of the soft palate as they were seen in this case, doubtlessly had for their origin a reflex cause, situated in a neoplastic and hyperæsthetic condition of the intra-nasal mucous membrane. In view of the fact that another exciting element has been mentioned as figuring in the etiology of the affection, the nasal disease may be termed the remote exciting cause.

Reference to a quotation from Dr. Williams informs us that the peculiar disorder of the velum palati became apparent soon after the patient, when still a child, had experienced on two consecutive occasions severe fright. This he maintains developed by its immediate exciting influence, the movements, which occurrence, it is my belief, simply brought into conspicuous activity what the reflex cause years before already had established.

The family history unmistakably illustrates a neurotic diathesis which evidently forms the predisposing cause.

Dr. C. E. Riggs, of this city, Professor of Nervous and Mental Diseases in the Medical Department of the University of Minnesota, who at one time saw the patient, personally related to me the following opinion when speaking of the nervous origin of the trouble:

"The antecedents and personal history of Miss Z., as related to me, clearly indicate the unstable and illy balanced condition which characterizes the nervous diathesis.

"Following the teaching of Pierret, we may regard all the intracranial nerves as analogous to a spinal nerve; the posterior root of this hypothetical nerve being the sensory portion of the fifth, its anterior root all the intracranial motor nerves, including the motor portion of the fifth. This hypothesis readily explains the clonic spasm of the levator muscles.

"Catarrhal states of the mucous membrane, more especially of the nasal and pharyngeal pass-

ages, may have their origin in a poorly nourished nervous system.

"The facial nerve gives off in the aqueductus fallopii three branches, two of which, the great and small superficial petrosal nerves, furnish motor influence to the levator palati, the azygos uvulæ, the tensor palati and tensor tympani muscles; through Meckel's ganglion the great superficial petrosal nerve is distributed to the levatores palati.

"The diseased surfaces under consideration derive their sensation from the fifth. The catarrhal condition of these mucous surfaces may be considered both as a cause and an effect, but the prime factor in the evolution of this peculiar clonic spasm I believe to be the intense nerve sensitiveness of the patient, since, without it, there would have been no reflex excitation, but a purely local condition.

"The excessive hyperæsthesia of the diseased tract clearly shows great irritation of the terminal sensory filaments of the fifth nerve.

"Accepting Pierret's hypothesis that the cranial nerves, as a whole, comport themselves like a spinal nerve, the reflex nature of the spasm is readily describable."

That this is a rare case is quite evident; whether another just like it has as yet been reported is doubtful.

The cases reported by Sajous (*Universal Annual*), and by Burnett (*Trans. of the American Otological Society*, vol. iii, part 3), were, it appears, particularly associated with disease of the Eustachian tubes or ears, and the crackling noises characterizing them the authors ascribe to aural complications.

Mackenzie, in Wood's "Reference Handbook," when speaking of the subject, says: "Clonic spasms of the soft palate, with objective noises in the ear, dependent upon neuralgia of the trigeminus, have been observed by Scheck."

A series of interrogations always gave negative results in the case I have here reported; no information could be obtained which led to the belief that Eustachian or aural diseases had at any time existed.

Then, as to the clicking sound; what produced it? It was seen distinctly that the levator muscles of the palate were the only ones engaged in the spasmodic actions; therefore, by repeatedly watching these phenomenal movements, the conclusion seems reasonable that the click resulted from the combined effect of muscular rigidity and sudden disengagement of the velum palati from the pharyngeal vault.

104 East Third St.

A SOCIETY of German Dermatologists is to be formed. Circulars have been sent out by Professors Neisser and Pick, and a committee has been formed for carrying out the plan.

MEDICAL PROGRESS.

ANALYSIS OF 500 CASES OF ACUTE RHEUMATISM.—DR. H. WALTER SYERS thus analyzes 500 consecutive cases of acute rheumatism:

Every case of acute rheumatism admitted to the Westminster Hospital during the last seven years has been carefully investigated with especial reference to the inheritance of rheumatism, nervous disease, and of phthisis. Attention has also been given to the subject of heart lesion. The analysis given below is based upon an examination of 500 consecutive cases, the history having been obtained for the first four years by Mr. Hebbert, medical registrar during that period, and continued by myself.

Sex.—There were 235 males and 265 females.

Age.—Under 5 years, 1; from 5 to 10, 26; 10 to 20, 188; 20 to 30, 154; 30 to 40, 90; 40 to 50, 29; 50 to 60, 10; over 60, 2.

Inheritance.—(a) There was a history of *rheumatism* in near relatives of the patient (father, mother, brother, sister, uncle, aunt) in 193 cases, or in 38.6 per cent. of the whole number admitted. A history of acute rheumatism in members of the family similarly related to the patient was found in 107 cases, or in 21.54 per cent. of the whole number. A history of acute rheumatism occurring in either parent was found in 46 cases, or in 9.2 per cent. of the whole. I have further ascertained the number of cases with acute rheumatism inheritance occurring at each period, and have compared these numbers with the numbers representing the cases occurring at the corresponding periods. The result is as follows:

Age.	Total.	Acute Rheumatism Inheritance.
Under 5	1	1
5 to 10	26	7—1 in 3.7
10 to 20	188	62—1 in 3.03
20 to 30	154	24—1 in 6.4
30 to 40	90	9—1 in 10
40 to 50	29	3—1 in 9.6
50 to 60	10	1—1 in 10
Over 60	2	0

(b) *Gout.*—A family history of gout was obtained in only 38 cases, 7.6 per cent. of the whole number.

(c) *Neurosis.*—Of nervous disease in the family history I found 80 cases or 16 per cent. Of these 80 cases, a family history of insanity was obtained in 39 cases, and a history of epilepsy in 22 cases.

(d) *Phthisis.*—In 83 cases (16.6 per cent. of the whole number) there was a family history of phthisis found. Thus the percentage of cases owing a phthisical family history is a fraction greater than that representing a neurotic inheritance.

Heart.—The cases complicated with heart affection were 267, or 53.4 per cent. of the whole. Of these, there were 48 cases (17.9 per cent.) of

pericarditis, 83 (31 per cent.) of endocarditis, and 136 cases (50.9 per cent.) of combined endocarditis and pericarditis. In 160 cases it was possible to ascertain the age at which the heart affection occurred, and the result is as follows: Under 5 years of age, 0; 5 to 10, 14; 10 to 20, 87; 20 to 30, 37; 30 to 40, 16; 40 to 50, 4; 50 to 60, 2; over 60, 0. The percentages of the numbers admitted with heart affection (for the first time) at the corresponding ages being as follows: Under 5 years of age, 0; 5 to 10, 51.85; 10 to 20, 46.52; 20 to 30, 24.02; 30 to 40, 17.7; 40 to 50, 13.8; 50 to 60, 20; over 60, 0.

Only in 19 cases was the occurrence of *chorea* noted in the history of the patient, either before admission, during the attack of acute rheumatism, or during convalescence. Of these 19 cases, 12 were females and 7 males. In 7 cases the chorea was followed by acute rheumatism; in 4 cases the attack of chorea occurred during convalescence; in the remaining 8 cases the chorea and the rheumatism were separated by an interval varying from several months to several years.

Season.—From January to March, 146 cases were admitted, or 29.2 per cent.; from April to June, 92 cases, or 18.4 per cent.; from July to September, 120 cases, or 24 per cent.; and from October to December, 142 cases, or 28.4 per cent.

From April to September, 205 cases, or 41 per cent., were admitted; from October to March, 295, or 59 per cent. In January were admitted 54 cases; in February, 48; March, 44; April, 32; May, 28; June, 32; July, 28; August, 45; September, 47; October, 56; November, 34; December, 52; total, 500.

Mortality.—The total number of deaths was 15, or 3 per cent. Of males 9 died, and 6 females. There were 2 deaths with hyperpyrexia, the temperatures attained being respectively 108.8° and 107.2°; 1 death resulted from ulcerative endocarditis, 5 from pericarditis and endocarditis, 1 from pericarditis and pneumonia, 1 from pneumonia, 2 from collapse, and 3 from old-standing morbus cordis.—*Lancet*, June 30, 1888.

TREATMENT OF UNUNITED FRACTURE OF THE NECK OF THE FEMUR.—In the *Riforma Medica*, of August 14, a case is related, in which PROF. LORETA successfully treated an ununited intra-capsular fracture of the neck of the femur, by scraping the fractured surfaces and inserting a bundle of metallic sutures between them. On January 23, a robust man, æt. 36, was admitted into the Bologna clinic with the history of a fall on the left hip, nineteen months previously, since which he had been quite unable to stand, and had suffered from constant severe pain, shooting from the left hip-joint into the gluteal region, the point of greatest intensity being over the course of the

sciatic nerve. The limb was much wasted, but it was normal in position, and scarcely at all shortened. Flexion and extension of the thigh on the pelvis were almost impossible, but the patient could occasionally execute very slight movements of rotation and abduction. In rotation, he was sometimes conscious of faint crepitus in the trochanteric region. Feb. 15, Prof. Loreta operated with full antiseptic precautions. He made a long incision behind the great trochanter to expose the capsule of the joint, when he noticed a depression between the intra-capsular and extra-capsular portions of the neck of the femur. On moving the limb, it was found that there was a fracture without displacement in that situation. The capsule was then opened, the fibrous tissue between the fragments divided, and the fractured ends carefully freshened by scraping with a raspator. As it would have been very difficult to wire the fragments, a bundle of from eight to twelve metallic sutures was introduced between them, and brought out at the lower angle of the external wound. The wound was carefully cleansed, a drainage-tube inserted, the edges brought together with deep and superficial interrupted sutures, and the whole covered with a sublimate dressing. A long outside splint was then applied. Five days after the operation, the bundle of metallic sutures was removed, and the wound healed by first intention. In less than a month the pain had permanently ceased, and fifty-five days after the operation the patient left the hospital, being able, not only to stand, but to walk with no further support than an attendant's hand.—*British Medical Journal*, Aug. 25, 1888.

THE USE OF SALOL IN THE DISEASES OF CHILDHOOD.—DEMME has used salol in four cases of acute articular rheumatism, in two of acute endo- and pericarditis accompanied with articular fluxion to a moderate degree, and in two of catarrh of the bladder; also a topical application in two cases of burns. In the first two patients with the acute rheumatic polyarthritides, two boys of 8 and 13 years of age, the salol was given as long as the febrile symptoms persisted, as well as the swelling and redness of the joints, in doses of 3 or 4 grams daily. This dosage was continued with the first for five and the second for seven days, the dose being reduced to 2 grams and then to 1 gram during convalescence. In the third case, a girl of 7 years, in which all the articulations were swollen, and the fever was considerable, 20-grain doses of salol were given, and in forty-eight hours the intensity of the process had greatly diminished. The fourth patient was a girl 9 years of age, who vomited the first dose of salol which was given. An enema, containing 2 grams of salol, was then given, but in eight or ten hours an urticaria appeared which involved the entire surface of the body. The

salol was suspended, and two days later a dose of salicylate of soda produced an eruption similar to that produced by the salol.

Antipyrin was then given in gram doses, and in five days the rheumatism disappeared. In the two cases of endo- and pericarditis salol produced a favorable effect only when the cardiac action and intravascular pressure had been regulated by digitalis. The first of the two cases of catarrh of the bladder was caused by cantharides in a boy 5 years of age. The salol was given in doses of 1 gram, and this was gradually increased to 2½ grams; after two days the urine became acid, more abundant, and caused less pain in its passage. The case was cured in fifteen days. The second case was chronic cystitis following measles, and was equally well treated with salol. In the two cases of extensive burns the salol was mixed with an equal quantity of talc powder and dusted upon the wounds, which quickly cicatrized.—*Archives of Pediatrics*, September, 1888.

TREATMENT OF DIPHTHERIA.—COUSOT discusses anew the question whether diphtheria is primarily a general disease with local manifestations, or whether the diphtheritic membrane is the first factor in a general intoxication. The author believes that the great point is to combat the local manifestations from the beginning, and that they constitute the origin of all subsequent accidents. He believes that the following principles should dominate all rational treatment of this disease:

1. The medical treatment of diphtheria should be principally local at the beginning of the disease.
2. The organized germs of the products of diphtheria should be destroyed or sterilized wherever they occur.
3. Putrefaction of the elements of the diphtheritic membrane should be prevented at all hazards.
4. If the disease has reached an advanced period and general poisoning has supervened, local treatment should still be rigorously continued, in addition to the adoption of suitable means for controlling the general symptoms. The best means for the treatment of diphtheritic products with which the author is acquainted is a preparation of tannin, alcohol and mucilage applied with a syringe. Tannin is a safe antiseptic which may be extensively used without fear of injury to delicate tissues. The mixture which the author uses contains:

Mucilage	100 parts.
Tannin	10 "
Alcohol	2 to 20 "

If the false membrane is discovered when there is only a single patch upon the skin or the mucous membrane external to the air-passages, applications of the tannin may prevent its spread. If the pharynx, tonsils, or nasal fossæ are involved, the mixture should be injected by the mouth or nose every two hours. Evidences of putrefaction

will disappear after the first few injections, the membranes will shrivel, and the underlying mucous surface will assume a healthy red appearance.—*New York Medical Journal*, Sept. 15, 1888.

TREATMENT OF RUPTURE OF THE BLADDER.—In an original memoir contributed to the July number of the *Archives Générales de Médecine*, DR. A. BLUM has reported a case under his own care of intraperitoneal rupture of the bladder with peritonitis successfully treated, after an interval of forty hours, by laparotomy and suture of the wound. Of twelve recent cases—eleven collected from English and German sources—in which laparotomy was performed for intraperitoneal rupture, six ended in recovery and six in death. In the table of collected cases published by Bartels in 1878, ninety-three out of ninety-four cases were fatal. The following conclusions are given by Dr. Blum at the end of his paper: "The surgeon, in dealing with a case of certain or supposed rupture of the bladder, ought not to hesitate to incise the linea alba as soon as possible, in order that he may make out precisely the seat and extent of the lesion. If the laceration is seated near the base of the bladder—that is to say, if the peritoneum be not involved, perineal cystotomy will be indicated. In cases of intraperitoneal rupture the edges of the wound in the bladder should be brought together by sutures, and the 'toilette' of the peritoneum be performed without subsequent drainage. The best kind of suture, and the only one that has been successful in man, is that of Lembert (sero-muscular suture, not including the mucous membrane). When, in consequence of its situation and extent, the wound cannot be united, it should be sutured, if possible, to the abdominal wound, or drainage should be effected, according to the practice of Socin, by an artificial perineal wound. The existence of peritonitis at the time of operation is not a contraindication to stitching of the wound in the bladder. Still, the earlier the performance of laparotomy the better are the chances of success.—*London Medical Recorder*, August 20, 1888.

THE RESECTION OF GREAT VENOUS TRUNKS IN THE EXTIRPATION OF MALIGNANT TUMORS.—MADELUNG has been trying the effect of resecting the great venous trunks near malignant tumors when the cancerous disease did not appear to have become generalized, on the ground that the veins with the lymphatics form the road by which cancer extends. Schevan, in his inaugural thesis (*Contrib. f. Chir.*) reports fifteen cases. In eleven the jugular was resected, once on both sides. Twice there was resection of the common carotid and of the jugular at the same time, eight times for glandular metastatic carcinoma, and three times for lympho-sarcoma. In four other cases the femoral vein was resected, once with resection

of the artery, twice for cancerous glands following primary disease of the genitals, once for a tumor of the vagina, and once for primary cancer of the glands. Three patients died as a result of the operation; one of gangrene of the lower extremity and septicæmia following resection of the femoral vein, another as a result of resection of the common carotid and jugular, a third without the cause of death being positively established. Three died of local return, two of exhaustion, and two more of the primary disease, which could not be removed. Two were still alive, though suffering from a fatal return of the disease, and one was cured, though the observation dated only one month after the operation. Two patients were considered as cured; in one, death followed two years after the operation without any return, and the other had lived three years without a return.—*New York Medical Journal*, Oct. 6, 1888.

RESECTION IN ARTHRITIS DEFORMANS.—ZESAS, of Bern, in a paper on this subject, discusses the results of resection in cases of arthritis deformans with regard to the relief of pain, freedom from relapse, and the functional capacity of the limb. There seems to be good reason for asserting that the pains which cause so much distress in coitis deformans will be removed after resection, and reference is made by Zesas to permanent and complete relief of pain after resection of the elbow-joint for arthritis deformans. The results of the resection of the hip performed by Dr. Niehaus two years and a half ago, and those of like operation on other joints affected with arthritis deformans, show that there is no tendency to a recurrence of this disease after such treatment. With regard to the functional results of the operation, on the other hand, the prognosis is very unsatisfactory, since in three of the cases of resection of the hip in which reports have been given of the subsequent condition of the patients, the limb was too weak to sustain the weight of the body, and locomotion could not be effected without the use of crutches or some other means of support. It remains for subsequent and more abundant experience to determine whether such unfavorable results be due to the advanced age of the subjects of coitis deformans or to the nature of the affection itself, which may possibly prevent the development of a serviceable joint.—*Deutsche Zeitschrift für Chirurgie*, Bd. 27, Hft. 5 and 6.

A SUBSTITUTE FOR COD-LIVER OIL.—LAMANDE recommends the following as a substitute for cod-liver oil:

Glycerine	5x.
Tincture of iodine	5ss.
Iodide of potash	grs. xij.
m	

S. One teaspoonful fifteen minutes before meals.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, OCTOBER 20, 1888.

THE BRADSHAWE LECTURE ON URÆMIA.

The Bradshawe Lecture before the Royal College of Physicians this year, by DR. WILLIAM CARTER, was on a subject of great interest, which was ably handled by the lecturer. Beginning with the definition, "Uræmia may be defined as the altered condition of health caused by the accumulation within the body of poisonous products that should be eliminated by the kidneys," the lecturer points out that the symptoms of this altered condition are so various in themselves, and so variously combined, that within the limits of this general definition what on the surface appear to be altogether different diseases are formed; and it is not surprising that many explanations have been offered of such varying phenomena.

After a careful review of Traube's theory of uræmia, that the nervous symptoms are due to cerebral anæmia, and never occur without preceding cardiac hypertrophy and blood-dilution; that heightened blood-pressure causes cerebral anæmia, and as this affects one or another portion of the brain, there will be a preponderance of either coma or convulsions, the last being limited if the anæmia is limited, general if it is general, Dr. Carter is not inclined to support this theory. Much good work in renal pathology has been done by the French School of late years, and this is specially considered and discussed by Dr. Carter. The modification of Traube's theory adopted

by Jaccoud and by some eminent English clinicians seems far from unreasonable to him. It will be remembered that Traube's theory was called forth chiefly by the fact that the brain is pale and watery in some cases of death from uræmia. This, however, is not a constant pathological condition. Nevertheless, this condition should be regarded as of considerable importance, and may not, after all, be so antagonistic to the views of the chemical pathologists as they think. "We have," says Dr. Carter, "no absolutely certain *post-mortem* signs that enable us to say that either local dilatations or local spasms of cerebral vessels have occurred during life in any case of Bright's disease; but as, at any rate vascular spasm certainly occurs in other and sometimes strangely limited parts, where the death-like pallor which it produces can be plainly seen, it is at least not improbable that it may also occur in some of the vessels of the brain, where, from the nature of the case it cannot be seen."

But we must pass from this interesting aspect of the subject to the experimental methods of investigating uræmia. And we may begin by stating a cardinal point made by Dr. Carter, that uræmia is a toxæmia, and that whatever increases the flow of blood to the nerve-centres in a case of renal disease adds to the probability and danger of toxic manifestations. It is agreed that there is a poison producing the uræmia; but what it is we do not know. We may be said to know, however, that it is not urea, not carbonate of ammonium, nor any one substance. We know that normal urine is toxic, that it contains alkaloidal and other poisons; if these be not properly eliminated the system must suffer from their poisonous effects. The experimental investigation of uræmia, while showing that the difficulties to be overcome are many and great before the pathogenesis of uræmic poisoning can be understood, show at the same time what some of the difficulties are, and give great encouragement. And while great caution is required in interpreting clinical facts by the results of experiments on the lower animals, yet the experimental investigations that have been made are gradually opening up new methods of practice, and at the same time show what was good in the older methods by giving reasons for their being good.

In his recent work on "Auto-Intoxication in Disease" Bonchard's conclusions in regard to

uræmia may be thus summarized: The urine as a whole is poisonous. The sources of its toxicity are fourfold—namely: 1. Aliments, especially their potassium compounds. 2. The absorbed products of intestinal putrefactions. 3. Secretions, such as the bile, saliva, etc. 4. Tissue disintegrations. These circulate in the blood, and, unless removed, poison the tissues. Bouchard showed experimentally that the nature of the toxicity of the urine varies according to many circumstances, and he has determined the presence of seven distinct toxic substances combined in the most variable proportions under different circumstances. Two of these substances were convulsivant, one diuretic, one narcotic, one sialagogue, one pupil-contracting, and one temperature-reducing. We know, too, from recent investigations, that the urinary poisons have different effects according to the times and circumstances of their formation, at one time stimulating, at another inhibiting the same cortical cells of the brain, thus at one time causing paralysis and at another time convulsions in the animals into whose blood they are injected.

What then, in the way of treatment, have the experimental studies of uræmia taught us? Not only have these studies taught us newer and better methods of treatment, but they have pointed out earlier symptoms, the importance of the recognition of which cannot be overestimated. Dr. Carter shows that the principles on which practice must be based consist mainly (1) in cutting off one or another of the urinary poisons at their source, now that we know to some extent what these poisons consist of, and whence they are derived. Under this head we recognize the great importance (a) of limiting potassium salts both in food and in medicine, (b) of employing the simplest and most easily assimilated diet, such as milk, (c) of bowel disinfection, (d) of maintaining at its best the functional activity of the liver, (e) of care in the nature of nutrient enemata when these are required. (2) In directly and indirectly withdrawing or diluting the uræmic poison, by (a) venesection, (b) purging, (c) sweating, (d) transfusion. (3) By burning up the poison, by (a) active exercise, (b) the administration of oxygen or oxidizers. (4) In antagonizing the poison, or at least overcoming special symptoms. Practically, then, the sodium salts should be substituted for the potassium salts, the latter being forty

times as toxic as the former. The value of the milk diet has long been known, and the reason for its value is apparent. If it cannot be digested, then to the diet of foods that leave more residuum than milk must be added certain intestinal disinfectants, little soluble and non-poisonous, such as naphthalin, iodoform, and animal charcoal. As to the value of blood-letting in convulsions or coma, Dr. Carter thinks that if the pulse is hard and quick, a moderate bleeding will do no harm, even if the patient should be anæmic, and if he is not anæmic it will be likely to do good. Adding to the amount of blood, says Dr. Carter, will equally dilute the poison. Dieulafoy has cleared up the uræmic symptoms and secured great improvement by transfusing 120 grams of blood, and Dr. Carter has transfused freshly drawn goat's milk; or the solution of the chloride, phosphate and carbonate of sodium may be injected. The value of purgation and diaphoresis are so well known that they need not be insisted upon. Jaccoud's treatment of Bright's disease by inhalations of oxygen seems to promise good results. For the relief of uræmic asthma, it is probable that most good will be obtained from the agents that relax vascular spasm, such as ozonic ether.

Dr. Carter's admirable lecture may be found in the *Lancet* of August 25, and in the *British Medical Journal* of September 1. One finishes reading it with the feeling that, obscure as the subject is, he knows more of it than he did before.

DISINFECTION AND DISINFECTANTS.

The first report of the Committee on Disinfectants of the American Public Health Association has just been issued. If there were no other *raison d'être* of the American Public Health Association, this volume alone would be sufficient. The Committee on disinfectants, it will be remembered, was composed of Drs. George M. Sternberg, Joseph H. Raymond, Charles Smart, Victor C. Vaughan, A. R. Leeds, W. H. Watkins, and George H. Rohé.

The present volume contains the reports for the two years previous to 1887, which have already been noticed, and the report for 1887, which may in a certain way be regarded as an additional report with a summary of what is contained in the others. The report of the Chairman, Dr. Sternberg, is very full, as was to be expected. It is a

report of what he himself has done in the way of confirming the conclusions arrived at from work in former years. He discusses fully the data relating to the several disinfecting agents mentioned in the former reports. Former conclusions have been tested by experiments upon pure cultures of the various pathogenic and non-pathogenic bacteria available for this purpose. Elaborate and careful experiments have been made in regard to the thermal death-point of microorganisms, and conclusions drawn.

As to the single disinfectants, further experiments show that the high place at first given to chlorinated lime is fully justified; but Dr. Sternberg recommends that *Standard Solution No. 1* be made by adding 6 ounces of chloride of lime to the gallon of water, instead of 4 ounces. The results of the experiments of Dr. Meade Bolton, made for Dr. Sternberg, are in accord with those of Van Ermengern, and show that for disinfection of highly albuminous material the amount of mercuric chloride required will exceed that in the standard solutions (1:1500), formerly recommended by the Committee for sterilizing excreta. Preference is given to the chloride of lime solution for the disinfection of excreta. In regard to carbolic acid, a consideration of experimental data leads Dr. Sternberg to believe that carbolic acid possesses a decided advantage over mercuric chloride or over oxidizing disinfectants for the disinfection of masses of material to be left *in situ*, such as human excreta in privy vaults. This advantage is due to the fact that it is not decomposed nor neutralized by putrefying material, and that it will exercise its antiseptic action throughout the mass, even though it may not destroy spores or pathogenic organisms present. In the first report of the Committee sulphate of copper is recommended in a solution of 2 to 5 per cent. for the destruction of infectious material "*not containing spores.*" Dr. Sternberg now says that this proportion may be reduced to 1 per cent., except in the presence of a considerable amount of albumen, when the amount must be increased. Pure calcium oxide is found to have no great value for disinfecting purposes, but as it has considerable germicide power when used in the form of lime wash, especially after prolonged contact, its general use for sanitary purposes is to be recommended wherever it can be applied to surfaces supposed to be infected by disease germs.

The most complete paper on Ptomaines that has appeared in the English language is the one contributed to this report by Dr. Victor C. Vaughan. Following this are two very valuable articles, "Methods of Practical Disinfection," by Dr. George H. Rohé, and "The Quarantine System of Louisiana—Methods of Disinfection Practiced," by Dr. Joseph Holt. These papers are well and profusely illustrated. The conclusions in regard to disinfection and disinfectants will be published, for the information of our readers, in another department.

This report may be obtained from Dr. Irving A. Watson, Concord, N. H.

AN UNSEEMLY QUARREL.

In plate V of Hogarth's "Harlot's Progress" is presented the spectacle of two disciples of Æsculapius, who the commentator has the grace to insinuate are not regular, in a hot quarrel over a dying unfortunate, whom each charges the other with having poisoned. The scene points the moral that the doom is the pathetic rounding up of an evil career. Not a single character in this delineation shines with a reflected glory—all is dark, dismal and shuddering. There is a most woful want of all the proprieties, even down to the venal nurse despoiling a dilapidated trunk of its few valuables.

Now why should a magnanimous potentate, full of good-will to men, have been overtaken by the more cruel fate of a death made uneasy by domestic bickerings and court intrigues? Why should a noble profession, full of all beneficence, be besmirched by the quarrels of men oversensitive about a transitory glory, which might have been transferred by the will of the monarch upon the bragging professor of a cancer specific? Why should the "infallible" expounders of an art, who came to a diagnosis by the easy reading of a post-mortem backwards, have accentuated so-called snubs, while a desirable life was at stake?

"Not so happy—yet more happy," is the out-cast Lazarus in a Home for Incurables who is allowed to die in peace behind a friendly screen, with no public peering in at the windows and awaiting the flight of a wailing soul.

DR. PAUL GIBIER has been charged with a communication to study yellow fever in the United States, and particularly in Florida.

EDITORIAL NOTES.

ETHER IN HEART FAILURE.—PROFESSOR VON BAMBERGER has recently recorded, in the *Wiener klinische Wochenschrift*, an interesting case showing the effect of ether in cardiac insufficiency. The case was that of a man who came under treatment about two years ago, and who was suffering from cardiac insufficiency due to fatty degeneration (but no cardiac failure), and from considerable dropsy, albuminuria, hepatic enlargement, dyspnoea, and continual insomnia. The patient, a man æt. 60, was directed to try the Oertel "cure" in the mountains, but the dyspnoea and other symptoms became so aggravated before the "mountain cure" was begun, that the physician in attendance tried the effect of injections of ether. The effect of these injections was that the secretion of urine, which other drugs and means had failed to increase, rose to several thousand cc. daily, and continued so for some time; at the same time the dropsy and the dyspnoea decreased. The patient was now able to undergo the Oertel "cure," under which progress was made, but some months later he died of apoplexy. Bamberger thinks it probable that the good effect of the ether in this case was due to its action on the kidneys; though it may have acted as a direct stimulant to the enfeebled heart.

THE COLOSTRUM CORPUSCLE OF HUMAN MILK.—DR. EDGAR BECKIT TRUMAN, of Nottingham, has made some investigations to ascertain the significance of the colostrum corpuscle, and to ascertain the usual condition of the breast milk three months after confinement. Medico-legists usually mention the presence of colostrum in milk as characteristic of recent delivery. Dr. Truman, from a study of a number of cases, comes to the conclusion that the colostrum corpuscle is no proof of recent delivery, or of delivery, say, within the previous three months. It is a sign of incomplete development of the products of the mammary gland, and in this way we may get it with retroflexion of the uterus, prolapse of the ovary, incomplete action of the glands, chronic ovaritis, cancer of the breast, and dyspareunia with laceration, in all which cases we get the irritative action of disease, instead of the normal healthy activity of the reproductive organs. In fact, the presence of the

corpuscle would tend to negative the supposition of a delivery followed by three months' suckling. The record of Dr. Truman's cases may be found in the *Lancet* of September 1, 1888.

THE PHYSICIAN—A NATURALIST.—IN THE JOURNAL of September 15, attention was called to the address before the recent annual meeting of the British Medical Association, on this subject, by Dr. Gairdner. In the *Edinburgh Medical Journal*, of September, is a graduation address on this subject by PROFESSOR SIR WILLIAM TURNER, delivered on August 1, just a week before Dr. Gairdner's address was delivered. Sir William's address is somewhat on the same lines as Dr. Gairdner's, and it is certainly a coincidence that the two should have been delivered at almost the same time. Sir William Turner calls attention to the value of complete and accurate observation, to the great value of the study of the sciences, and to the contemplation of Nature in disease, by which the physician becomes inspired with a desire to penetrate the mysteries of life and organization, and to remove the healing art from the domain of conjecture and hypothesis, and plant it on the firm ground of science.

INTUBATION TUBES; THE ALLEN SURGICAL PUMP.—We are pleased to observe the favorable notice our English brethren gave two Chicago devices exhibited at the recent meeting of the British Medical Association. They deserved the attention. Dr. Waxham's paper on "Intubation of the Larynx" was very favorably received, as all who know him would have prophesied. His modifications of the intubation tubes were exhibited, as well as the methods and results of intubation described.

Mr. Truax was invited to exhibit the Allen Surgical Pump by several members of the Association who saw it at the International Congress and who subsequently used it. We learn from the *British Medical Journal*, the *Lancet*, the *Asclepiad*, and other English journals that it excited much notice, as it deserved to do. It is so simple and its uses so manifold, and its cost so reasonable, that it deserves the popularity that it has acquired in this country and, as we hope, now in England.

THE PHONOGRAPH FOR RECORDING PULMONARY AND CARDIAC SOUNDS.—During his vacation the past summer, DR. WILLIAM PORTER,

of St. Louis, Mo., says he used some of his time in experimenting with the phonograph for permanently registering the fac simile of any abnormal sound produced in the lungs and the heart. (See *Weekly Medical Review*). He says: "Not only are different voice sounds presented distinctly, but by attaching the ordinary stethoscope some of the cardiac sounds could be easily recognized after they had been recorded by the instrument." The most perfect result he obtained was from a case of *mitral insufficiency*. The subject is worthy of much careful investigation.

REMOVAL OF SUPERFLUOUS HAIRS BY ELECTROLYSIS.—This operation, which is not difficult, though requiring some practice, does not seem to be perfectly understood. A writer in the *British Medical Journal* says: An irido-platinum needle is commonly used, and is inserted along the sheath of the hair until it reaches the level of the root. It is most convenient in practice to use a strength that requires about 30 to 35 seconds to loosen the hair sufficiently so that it comes out without traction when taken hold of by the forceps. In dealing with hairs on the upper lip or on the chin of women, it is advisable to operate only on hairs that are strong and black. So long as the hairs are colorless, unless they are very thick and strong, they are better let alone.

DR. ABNER HAGAR, of Marengo, Ill., died at his home September 22, 1888, aged 73 years, and 8 months. He was one of the early and highly respected practitioners of medicine in the northern part of Illinois. He graduated from the Medical College of Geneva, New York, in 1841, and in the same year commenced the practice of his profession, first in Dundee, Ill., then in McHenry, and in 1843 moved to Marengo, where he continued to do a large practice until within a few years of his death.

HORSE-FLESH is said to be regularly exposed for sale in the butchers' shops in Liverpool, and the authorities do not interfere so long as the meat is sound in quality and is offered as horse-flesh. A case recently came up in Liverpool in which ill-smelling horse-flesh was offered for sale, and a witness said he killed one or two horses every week; certainly a surprising statement when one thinks how few horses that are unfit for work are suitable for food.

DR. W. W. IRELAND, the author of "The Blot upon the Brain," will shortly issue a gallery of eccentric or insane persons who have had much influence upon men. The list will include among others Swedenborg, Louis Riel, Guiteau, Theodore of Abyssinia, King Theebaw, and Malagrida.

DR WM. OSLER, Professor of Clinical Medicine in the University of Pennsylvania, has been elected Professor of Medicine in the Johns Hopkins University and Physician to the Hospital, Baltimore, Md. A very excellent appointment.

THE FIRST NUMBER of the *University Magazine*, has made its appearance, and is filled with interesting papers. It is published monthly, in the interest of the Medical Department of the University of Pennsylvania.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, September 26, 1888.

THE PRESIDENT, J. SOLIS COHEN, M.D.,
IN THE CHAIR.

DR. SAMUEL W. GROSS read the following paper on

THE TREATMENT OF CARCINOMA OF THE BREAST.

Of operations which do not rank with major procedures, not one is more commonly practiced by men not skilled in the manual of surgery than that of the removal of the mammary gland for carcinoma. The superficial situation of the organ, the ease with which hæmorrhage is controlled, the flaps are united, and the dressings applied, all tend to make partial or complete extirpation of the breast a tempting field for the young surgeon. If to these considerations be added the great frequency of the disease, it will be seen that its treatment should constitute an instructive topic for consideration and discussion by this body.

In accepting your invitation, Mr. President, to make the opening remarks upon the subject, I take it that a brief narration of my own personal experience will prove to be more interesting than were I to deal with the practice of others, the more especially as the operation which I have performed is more thorough than the usual procedure.

At the outset I will state that in the manage-

ment of so lethal an affection I have relied upon the scalpel, as I believe it to be the one and only measure which is capable of affording good results. It may be that some of my hearers are sceptical as to the propriety of interference. The old tradition that carcinoma is an outward evidence of a blood disorder, and that it cannot, consequently, be cured by operation, may still influence a few of our members. To these I may be permitted to say, first, that the leading minds of the world now admit that carcinoma is primarily a local growth; and, secondly, as I have elsewhere¹ conclusively shown, from an impartial examination of a large number of cases that the knife not only prevents the local dissemination of the disease, its extension to the lymphatic glands, and the occurrence of secondary growths in a large percentage of cases, but that it moreover prolongs life, and definitely cures one patient out of every eight and a half.

An operation in a suitable case having been decided upon, the one selected by the majority of surgeons is that with which we are all so familiar, namely, the inclusion of the nipple and a portion of the skin in two elliptical incisions, the reflection of the flaps, and the dissection of the gland from the surrounding tissues. Other surgeons, actuated by the desire to save as much of the gland as possible, limit their efforts to the extirpation of the tumor alone. The first of these procedures is faulty enough; the latter cannot be condemned in too severe terms; and yet, in his recent monograph on "The Operative Surgery of Malignant Disease," Butlin, I am sorry to say, recommends it. A knowledge of the changes which, starting from the tumor itself, ensue in the remainder of the breast, in the adjacent soft tissues, and in the associated lymphatic glands, which changes indicate the local extension of the disease along the lymph paths, ought surely to lead the surgeon to reject such irrational operations. In very exceptional instances a cure may be effected; but we all know what is the common result—a more or less rapid recurrence of the disease—a favorable issue being so uncommon after these incomplete operations that few, if any, of us have ever witnessed it.

Dissatisfaction with my own earlier results and those which I was enabled to follow in the practice of other surgeons led me, ten years ago, to adopt a radical procedure, the object being to effect riddance of all the tissues in which the experience of hundreds of years demonstrates that recurrence, or a new outbreak of the disease, takes place. Hence, in my operation, which is minutely described in the *American Journal of the Medical Sciences* for April, 1888, I amputate, by a circular cut, the entire breast with its overlying skin and fat, dissect off the pectoral fascia, and carry an incision into the axilla, through which I am en-

abled to extirpate its contents. If nodules should be found in the pectoral or intercostal muscles, they are also removed with an equally unsparing hand. The edges of the wounds are then approximated, the closure of the breast incision being greatly facilitated by raising the flaps from the subjacent tissue for $1\frac{1}{2}$ to 2 inches, and the employment of button sutures. In some cases, the wound cannot be entirely united, so that it has to heal by the process of granulation.

In the discussion which will follow the reading of my paper, I will doubtless be asked, first, Why do you remove the entire breast and its surrounding tissues? and secondly, Why do you attack the axilla in all cases? My answer is, simply because recurrence, or a new outbreak of the disease, ensues in tissues which are left behind in the less radical modes of operating. The accumulated observations of surgeons show that recurrence may be anticipated in the skin and subcutaneous tissues, especially at or near the cicatrice; in the fascia covering the pectoral muscles; in the remnant of the breast from which the tumor alone was excised; in outlying lobules which were overlooked during the performance of the less complete operations, and in the lymphatic glands, particularly those of the axilla.

Answering these questions more fully, I would say that sound pathology, as well as experience, demands that the entire mammary gland, along with its circumjacent tissues, should be amputated, first, because we have to deal with a carcinomatous degeneration commencing at one point from which the cells migrate in various directions into the remainder of the breast and the surrounding tissues, the extent of which migration into the lymphatics and their radicles it is impossible to determine with the naked eye; secondly, because the disease is sometimes multiple, and the smaller growths are only detected on examining the breast after its removal; thirdly, because minute lobules frequently lie at some distance from the main body of the gland, particularly toward the axilla and the clavicle, which may subsequently become the seat of a new outbreak, even as late as ten years, as in a remarkable instance recorded by Banks; and fourthly, because nodules may be found in the subcutaneous tissues at a relatively great distance from the breast, which would certainly have escaped detection in the lesser operations.

My answer to the second question, Why do you attack the axilla in every case? is, because the axillary glands are almost always diseased, even though they cannot be felt prior to operation. Of my 45 cases, the glands were not palpable in 18, but in 15 of these they were present when the axillary space was opened. In 57 out of 65 similar cases, Kuester found that the glands were infected, so that our combined experience demonstrates that the glands are invaded in 86 out of every 100 cases in which there is no ex-

¹ American Journal of the Medical Sciences for April, 1888.

ternal evidence of their implication. Hence, if the axilla be not evacuated of its contents in every case, a subsequent operation will almost surely be demanded. In point of fact, I consider this step as the keynote of the procedure, and I refuse to operate if I am not permitted to have my own way in this regard.

Although the procedure which I have described may appear to be unnecessarily severe as to the sacrifice of tissue and, at first sight, seem to be attended with more risk than operations performed with a more sparing hand, I have still to present some facts which conclusively show that it is the best that has as yet been practiced as regards mortality, freedom from local recurrence, and a final cure.

Of my 45 cases, 2, or 4.44 per cent., perished from the operation, and 5 patients were lost sight of after recovery. Deducting the 7 that died and could not be traced, 38 cases show local recurrence in 11, or 28.95 per cent. Including the deaths, out of 40 cases, 9, or 22.5 per cent., recovered. Of these, 1 died of an intercurrent disease in 7 years and 10 months, while the remainder are still doing well, 1 for 9 years and 10 months, 1 for 9 years and 1 month, 1 for 6 years and 9 months, 1 for 4 years and 3 months, 1 for 3 years and 11 months, 2 for 3 years and 6 months, and 1 for 3 years and 5 days.

Let us contrast these results with those afforded by the next best operation, namely, the removal of the breast by flaps and the evacuation of the contents of the axilla in every case. Of 328 cases of this description in the hands of Banks, Kuester and von Bergmann, 10.67 per cent. perished, there was local recurrence in 54.92 per cent., and 15.15 per cent. were cured, so that my operation is safer by 6.23 per cent., is less liable to local recurrence by 25.97 per cent., and affords 7.35 per cent. more of permanent recoveries.

It is quite certain that the greater immunity from local reproduction of the disease in my operation is due to the total amputation of the breast, its skin, and enveloping fat. Despite the fact that my results are better than any that have heretofore been recorded, a careful examination of the cases of Banks shows that he met with only 3.88 per cent. more of recurrences than I have, and that his percentage of recoveries, viz., 20.77, is only 1.73 per cent. less than my own. Hence, I felt that I might possibly have sacrificed too much of the skin; and, since June, 1887, I have so far modified my operation in 10 cases, the skin in none being apparently affected, as to save enough of that structure to admit of nice approximation of the edges of the wound. All recovered from the operation; one died from recurrence in the axilla and metastasis, one is living with axillary reproduction; in not one has there been local reproduction; one patient is free from disease at the end of fifteen months; one for one

year; one for nine months; and the remainder for periods varying between three and eight months. These cases can be followed, and whenever I am sure of being able to trace my patients, I shall give this procedure a fair trial. When, on the other hand, the patient lives at a great distance, or her circumstances are such as to prevent her visiting me in the event of recurrence, I will adhere to the more extensive operation.

DR. JAMES COLLINS: I have on two or three occasions, in the case of small tumors in comparatively young women, allowed myself to be over-ruled by the patient and her friends, who urged that it would be a pity to sacrifice so much of the breast as I proposed, to performing a restricted operation; but I have regretted it in every instance, and I can assure Prof. Gross that I will never offend again. That which Dr. Gross describes as the "second-best operation," the large elliptical incision with thorough removal of tissues beneath the skin and exploration of the axilla is the one I have practiced in the majority of my cases. The prolongation of life in those I have been able to follow would average not quite three years.

The great difficulty we have to contend with in mammary tumors is to secure consent to an early operation. Patients go from surgeon to surgeon, and from city to city, and finally yield consent as a last resort or in deference to an authoritative opinion; usually too late to escape recurrence. The recurrence which then takes place, despite skilful operation by a distinguished hand, will be cited in discouragement of timely operation in other cases, by a large circle of relatives and friends.

The exploration of the axilla, which the lecturer in his masterly demonstration has so justly emphasized, should never be omitted. Nor is it too trite a remark to recall that antiseptic methods, which have so improved the results of extended operations, should here also remove any lingering dread of opening up large spaces; for they have improved the outlook of the procedure by assisting the rapidity of healing, and excluding the danger of septic accidents and sequelæ.

DR. O. H. ALLIS: I have nothing to add in discussion; I have repeatedly seen Prof. Gross operate, and there is one point in his method of operation to which I would call especial attention. The breast having been covered for twenty-four hours with antiseptic solutions and his hands being thoroughly aseptic, he carefully palpates the pectoral region for outlying nodules, marking the site of any that he finds with a pencil-stroke, and when he operates he does not dissect out these places, but includes them well within the sweep of the line of incision. In other words, he cuts beyond the outer limits of the disease.

DR. JOHN B. ROBERTS: Dr. Gross has for

many years taught us all the proper way to remove a breast, that is, to remove it thoroughly. In my own operations, I have, whenever possible, employed the large elliptical incision; the advantage, and I confess the only one, being that when approximation of the edges of the wound is at all possible, it can by this method be more readily effected. No one who has learned from Prof. Gross the proper way to open the axilla would dare to neglect this portion of the operation. As to aseptic and antiseptic methods, there can be no difference of opinion among experienced operators; they are the only methods permissible in operative surgery. I would like to ask Dr. Gross how long it takes to repair one of the large spaces in what he calls the dinner-plate incision, and what his opinion would be as to the prospects of a plastic operation to aid in hastening healing.

DR. R. BRUCE BURNS: Of all surgical cases these are the most unsatisfactory. In my earliest operations I did not open the axilla. Three cases operated on in this way are living for eleven, nine, and five years respectively. Of later years I have opened the axilla, and have been unfortunate. Recurrence has taken place in the cicatrices and even in the axillary tissues, perhaps in small glands not removed. I have thought, perhaps, it recurred in the adipose tissues. I have usually employed the elliptical incision. The method of leaving a large open wound to heal by granulation is rather hazardous. In all cases where I have had to depend upon extensive granulation there has been rapid recurrence and metastasis. There may also be limitation of the movements of the arm from matting of the tissues. It is wise always to attempt to secure union by first intention. It would be well to attempt to remove outlying nodules in the surrounding tissues. Where nodules occupy a portion of the gland (mammary) and are intimately attached to it, the whole organ should be removed.

Antiseptic measures are only so far useful as, in arranging them, you secure aseptic conditions. I believe thorough cleanliness in all respects, as to instruments, dressings, and the surgeon's hands, with good drainage, is all that is necessary in the treatment of the wounds of operations.

DR. GROSS, in closing the discussion, said: There are many points which might have been touched upon in the paper which I omitted for the sake of brevity. Societies do not like to listen to long papers, and the best speakers teach little in long papers. The points I have tried to emphasize are, the importance of a thorough operation, and the fact that its results are better than those of incomplete operations.

Now as to primary union. Of course, I want to get primary union whenever I can. Those who have never seen my operation would be surprised to see how close an approximation we can

get by sliding the bistoury under the skin, say for from one to two inches, and then drawing the loosened flaps together with buttoned sutures.

Sometimes when there has been very extensive disease, necessitating correspondingly extensive operation, we have a gap left to granulate of two or three fingers' breadth—never more than three fingers' breadth. Healing may be slow in a debilitated subject with a large wound, but averages about six weeks.

Now as to saving the breast, and only removing the tumor itself—I do not care for the breast. It is of no use. I am concerned in getting rid of all diseased tissues. What surgeon would undertake to remove a sarcoma of the thigh, for example, and for the sake of leaving a little more stump, make his flaps through infiltrated tissue? I should consider such a procedure criminal. Yet it is just what some surgeons want us to do in the breast.

In my last ten cases I did, for reasons stated in the paper, the lesser operation, and if I find it equally satisfactory in the end, I will adopt it altogether. I am not wedded to one operation, only so far as not only personal experience, but the combined statistics of several operators with good results show that my operation has given the best results.

Dr. Burns has had an experience of coincidences. In the cases in which he did not open the axilla and recovery took place, he had a free axilla. I judge that the doctor thinks recurrence takes place in granulations. Now it is a histological fact that granulation tissue will give rise to granulation tissue alone, and not to epithelial tissue. The granulating surface may be great or small; that has nothing at all to do with recurrence. In those other cases all the disease was not removed, and hence development again took place in the tissues forming the bond of union, or the tissues near the cicatrice.

As to aseptic surgery, I can only say that if anyone has been taught the modern methods and neglects them, and death occurs from erysipelas, pyæmia or septic complication, he cannot be held irresponsible.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Communication of the Amniotic Liquor and Maternal Blood—Clinical Urology of Small-pox—Relaxation of Ophthalmic and Dental Disorders—Time for administering Certain Drugs.

In a note in the *Archives de Tocology* on the communication of the amniotic liquid and the maternal blood Dr. Törngren remarks that the

former experiments of Gusserow, Fehling and Quinquaud had clearly established that soluble substances introduced into the circulation of the mother entered the ovum. Experiments were equally performed by Savory, Gusserow, Preyer and Bar in the opposite sense, to establish the passage in the "matrilethal" direction. But how the substances injected into the amniotic liquid returned in the maternal circulation was a point not very clearly elucidated, and it is this that Dr. Törngren endeavored to establish in his experimental work executed under the direction of Professor Strauss. He was able to establish, with Drs. Bar and Haidlen, that an absorption by the mother certainly took place of substances contained in the liquid of the amnios. As regards the channel followed for this absorption, the results are not absolutely decisive. Contrary to Schultze, Dr. Törngren, however, thinks that the absorption is not effected by the medium of the fetal organism (the child taking in in the first instance by deglutition the amniotic liquid), but principally by the placenta or the membranes. These experimental facts, observed in the rabbit, found their analogies in the anatomical researches made by Winkler on the placenta of the human female. He established that in the placental portion of the chorion and of the amnios canalicules exist which communicate with the amniotic cavity.

Dr. Robin has lately made a very interesting communication to the Academy of Medicine on the clinical urology of small-pox, a question which had never been treated in a systematic manner. The researches of Dr. Robin have led him to establish in small-pox four varieties of albuminuria: 1. Prevariolic albuminuria, occurring before the eruption. It is grave when it is abundant. Only one case of the kind has ever been known. 2. Transitory albuminuria. This is a little marked and shows itself at the outset of the eruption and of suppuration. It is of no diagnostic or prognostic value. 3. Abundant albuminuria, coming on at any period of the acute stage. This is rare and of a grave prognosis. 4. Albuminuria of convalescence, which should be divided into two varieties. The first accompanies or precedes the febrile returns of convalescence, or a tardy complication: abscess, parotiditis, etc. It is transitory, little abundant and without serious prognosis. The second is analogous to post-scarlatinal albuminuria and, like this, proceeds from a particular form of nephritis termed variolic nephritis, the anatomo-pathological characters of which have been lately studied by M. S. Renault, of Lyons. The pathogenic conditions which favor the appearance of albuminuria are still rather obscure. The examination of the greater part of observations published leads to this eclectic conclusion, that the two principal predisposing factors of secondary variolic albuminuria are the intensity of the malady on the one hand, and the bad gen-

eral condition of the patient on the other. As to the exciting cause, it is not precise in any case outside common cold, which figures in all the etiologies. To impute it to parasitism is evidently that which is the most rational in the present state of our knowledge.

In a lecture on the relation of ophthalmic to dental disorders, Dr. Galezowski, the well-known ophthalmologist, dwelt on the close correlation between some eye troubles and caries of the upper teeth. In young children, the slight inflammation and discomforts accompanying the cutting of the first teeth produce keratitis and small corneal ulcers, and these can sometimes be cured by treatment of the teeth. In the shedding of the first teeth a spasm of the eyelids is sometimes observed, which can be removed by extracting the teeth. With the shedding of the wisdom teeth corneal inflammations occur. In adults, the commonest result of dental caries on the eyes is a weakening of accommodation by reflex action through the fifth pair of nerves. Of this the author gives two examples. An American lawyer had had for two years such weakness of accommodation as to make his work almost impossible. There was no hypermetropia or astigmatism, but two of the molars of the upper jaw were decayed and stopped with gold. Dr. Galezowski advised their extraction, and in a few days his patient was able to resume his work. From this it was concluded that the patient's troubles arose from compression of the dental nerve. In another case in which the weakness had lasted for three years, it improved greatly soon after the extraction of a single molar. There was also a case of temporary but almost complete functional blindness following extraction of an upper molar in a man aged 20, who was under the care of Professor Richet at the Hôtel Dieu. Conversely, in a nervous woman, a patient of Galezowski, who had amaurosis of one eye, perfect sight was immediately recovered by removal of a carious molar tooth on the same side.

The *Revue Internationale* has published a note on the proper time for the administration of certain drugs. The alkalies should be taken before meals. Iodine and its derivatives should be taken when the stomach is empty, they are then more rapidly diffused in the blood. During digestion they are decomposed by the acids and starch, and consequently lose their properties. Acids should be administered between meals; if the gastric juice is very acid, they should be taken immediately before meals. Irritant or dangerous substances such as arsenic, copper, zinc, iron, etc., should be taken before meals. The nitrate of silver should be administered before meals. Corrosive sublimate and the greater part of metallic salts should be taken when the stomach is empty. The extract of malt, cod-liver oil, and the phosphates are administered preferably during meals or immediately after.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM AN OCCASIONAL CORRESPONDENT.)

New York State Medical Association—Puerperal Septicæmia—Are Puerperal Febrile Disturbances due to Microorganisms—The Etiology of Puerperal Fever—Conditions Predisposing to Puerperal Septicæmia—Pathology of Puerperal Septicæmia.

The recent meeting of the New York State Medical Association, which was held at the Hotel Brunswick, October 9, 10 and 11, was a very successful and attractive one. The attendance was somewhat larger than last year, and the banquet on the evening of the second day was a most enjoyable affair. Professor William T. Lusk, of Bellevue Hospital Medical College, was elected President, and Drs. Ferguson and Hinton were, of course, re-elected Secretary and Treasurer. The Vice-Presidents chosen were as follows: First District, Dr. S. H. French, of Montgomery Co.; Second District, Dr. R. C. McEwen, of Saratoga Co.; Third District, Dr. Elias Lester, of Seneca Co.; Fourth District, Dr. T. D. Strong, of Chautauqua Co.

The elaborate programme, that has already been published in THE JOURNAL, was faithfully carried out, and, as in previous years, the set discussions on subjects of general scientific interest were the main feature of the session. Probably the most entertaining contribution was the address on Medicine, by Dr. Shrady, who took for his subject, "Medical New York in 1800."

The discussion on *Puerperal Septicæmia* was introduced by Dr. C. C. Frederick, of Buffalo, who stated that as the danger of infection in any case was in direct proportion to the avenues of approach left open for the invasion of sepsis, the importance of prophylaxis was evident. The strictest antiseptic precautions, he thought, should be observed in every case of labor, and among the measures that he advocated was the use of a vaginal douche of bichloride solution (1 to 3,000) before delivery. The placenta should always be removed with the patient on her back, in order to prevent the ingress of air which was likely to take place if she was in Sim's position. After delivery the perineum should be examined, and sutures applied if there was any rupture. If for any reason it was necessary to introduce the hand into the uterus, an intra-uterine injection of bichloride solution (1 to 4,000) should be subsequently employed. He advocated the use of the antiseptic pad, and thought post-partum vaginal injections were unnecessary. When the bowels or bladder were evacuated the patient should be raised to the upright position, in order to drain the uterus and vagina.

As regards the prognosis of puerperal fever, he said that the purely septic forms were the most

dangerous, unless the conditions were promptly and thoroughly treated. When septic germs had once gained entrance into the blood and the lymphatics they were beyond the reach of the physician; but further infection could usually be prevented, and if the patient's strength could be kept up, the hope might be entertained that the poison would be eliminated from the system. He regarded putrid lochia as one of the most potent causes of sepsis.

When septicæmia declared itself vaginal injections of bichloride solution (1 to 2,000) should be employed at intervals of from three to six hours, according to the urgency of the symptoms; and after the use of the douche the patient should be required to sit upright for a moment, so as to drain the parts. All necrosed patches in the genital canal should be touched with a mixture of persulphate of iron solution and compound tincture of iodine, as recommended by Lusk, and if there are any diphtheritic patches, the chloride of zinc should be employed, as advocated by Garrigues. Dr. Frederick thought it probable that the intra-uterine douche had been resorted to too frequently, and that the real benefit in most of the cases when it was used resulted from vaginal irrigation. Among the dangers likely to arise from this practice was one that had been overlooked, viz., that of conveying septic material from the vagina into the cavity of the uterus. If the intra-uterine douche were deemed necessary, the patient should be placed in the lithotomy position, and from one to three pints of bichloride solution (1 to 4,000) carefully injected. Afterwards the uterus should be squeezed dry, a pencil of iodoform inserted into its cavity, and a dose of ergot administered to insure contraction. In controlling high temperature antipyrin, and preferably antifebrin, was frequently of service.

The first question propounded, *What facts can be cited in support of the doctrine that the puerperal febrile diseases owe their origin to the action of microorganisms?* was discussed by Dr. H. M. Biggs, of New York. He said that the natural resistance of the tissues must first be overcome before septic germs could obtain an entrance, and in the normal parturient woman the lochial discharge and the abundant secretions of the parts continually protected the wounded surfaces. The uterus was also kept tightly closed by its own contractions, and the epithelium of its cavity occluded its orifices with an impenetrable shield. If, however, anything occurred to diminish the quantity of the lochia—if the uterus did not contract properly, if the vital resistance of the tissues are reduced by depressing influences of any kind, or if portions of membrane or blood-clot were retained in the uterus, and if under any of these circumstances microbes were introduced, it was evident that the most favorable conditions for the development of puerperal septicæmia were present.

With these points in view, it was easy to understand how the use of antiseptic precautions was so efficient in preventing this condition. If, in the first place, an antiseptic vaginal douche was employed during and immediately after labor, and if, in the second place, an antiseptic dressing were kept applied after delivery, impaction was much less likely to occur than if these measures were not resorted to, and if it did occur, it was apt to do so at a later period, when a better opportunity was afforded for counteracting its effects. The different conditions met with in different cases explained the various forms of puerperal septicæmia met with. After death pyogenic organisms had been met with in the milk-glands, in the lymphatics, and in the various organs throughout the body, and it had been demonstrated that they were eliminated during life by the kidneys and other emunctories. The *streptococcus pyogenes* was found in a large number of cases, and it was probable that this microbe was identical with the *streptococcus* of erysipelas. The next most common bacillus met with was the *staphylococcus*, the ordinary microbe of suppuration.

The puerperal febrile diseases were, therefore, a class of affections closely allied to infectious surgical diseases. The bacilli of the latter were known to be capable of producing all the conditions met with in puerperal septicæmia. The abolition of the latter from maternity hospitals constituted one of the most remarkable chapters in the history of bacteriology, and hence the conclusion could not be avoided that these diseases were of bacterial origin.

The second question was, *Is there a specific febrile disease peculiar to the puerperal woman, or are the various forms of puerperal fever the result of septic or putrid infection similar to or identical with that familiar to surgeons as septicæmia? What etiological relations exist between the zymotic diseases and some forms of puerperal febrile diseases, and in what manner are the zymotic modified by implantation upon the puerperal state?* It was discussed by Drs. E. D. Ferguson, of Troy, and S. B. W. McLeod, of New York. Dr. Ferguson said that he had no hesitation in answering the first part of this question in the negative. In our present state of knowledge the theory that puerperal fever is a specific disease seems no longer tenable, and at the last important discussion on the subject in this country, viz.: that before the New York Academy of Medicine in the winter of 1883-4, the only participant who advocated the specific character of the affection was Dr. Fordyce Barker. When fever occurred *ante-partum*, as was undoubtedly occasionally the case, it was more reasonable to suppose that it was due to some of the causes which might give rise to pyrexia at any time, rather than to a specific puerperal fever without any anatomical basis.

As regards the second part of the question, he said it could be shown that pregnancy did not afford immunity from any of the zymotic diseases. It was necessary to distinguish between those cases in which the zymotic disease complicated the puerperal fever, and those in which the zymotic infection gave rise to the puerperal fever. With regard to diphtheria, he desired to enter a protest against regarding every case of membranous exudation as one of true diphtheria. The zymotic diseases were apt to be more or less modified by implantation on the puerperal state, and the mortality was often increased, especially when pelvic inflammation was present. The diminution of the red corpuscles and the increase of fibrin in the blood resulting from pregnancy might perhaps explain to some extent the greater severity of the zymotics, as a rule, in parturient women. In cholera, however, the mortality was apparently not increased in pregnant women. Small-pox was noted for its mortality in this class, the death-rate ranging from 20 to 40 per cent. It frequently caused abortion, which was apt to be followed by the death of the patient; and the same was true of scarlatina and measles. The relation between erysipelas and puerperal fever had long been well known. This disease was not so fatal, however, if care was taken to avoid infection of the genital tract.

Dr. McLeod said in the course of his remarks that it might in general be stated that puerperal fever was a complex disease, depending on a variety of causes, although dependent in most cases on surgical septicæmia. The test of treatment, as shown by the remarkable success of antiseptic midwifery, conclusively proved this.

Drs. F. W. Ross, of Elmira, and John Shrady, of New York, discussed question 3: *What conditions of the woman predispose to the development of puerperal septicæmia? To what extent are the accidents of childbirth, together with the manipulations of the accoucheur, to be considered as etiological factors in puerperal infection? Are there any antiseptic measures before, at, or after labor, under any and all conditions or complications, that may be relied upon as prophylactic to puerperal septicæmia?* Dr. Ross said that no iron-clad rules could be laid down for prophylactic treatment, but the observance of certain measures, with due regard to the condition and surroundings of the patient, would, in general, be of service. In the first place, the woman should be placed in the most perfect health attainable, both general and local, before her confinement. At the time of labor she should have plenty of pure air, and all things about her should be scrupulously clean; efficient antiseptic solutions being employed to secure this end. If the perineum were ruptured, either sutures should be put in or antiseptic protection afforded to the parts. Antiseptic injections might be judiciously used, if called for, before, during or after labor.

Dr. Shrady said that one of the most important predisposing conditions was a lowered vital tone; and this view was supported by the bacterial origin hypothesis, because it was well known that healthy tissue constitutes the great barrier against microbic infection. The primary channel of infection was the genital tract, and experience had taught the advisability of making infrequent vaginal examinations.

The question, *What is the pathology of each of the several forms of puerperal septicæmia? What conditions or circumstances incident to puerperal septicæmia, and what forms of the disease, tend to render it fatal?* was discussed by Dr. Frank Graaer, of the Carnegie Laboratory. Drs. Wm. T. Lusk, of New York, and R. L. Banta, of Buffalo, discussed the last question, which was as follows: *What plan of antiseptic treatment can be employed with a large degree of success in each of the several forms of the disease? Does every rise of temperature above 100° F. in the puerperal woman constitute an indication for immediate resort to irrigation? When should irrigation be intra-vaginal and when intra-uterine? When irrigation is employed, how often should it be done, and when should it be discontinued? What hygienic, medicinal and dietetic treatment is to be used, in addition to the local antiseptic measures? To what extent should alcoholic stimulants and antipyretics be used?*

Dr. Lusk said that in the midwifery of the future there was reason to believe that there would be no occasion whatever to discuss the treatment of puerperal septicæmia. In his opinion this condition ought never to follow a properly conducted labor. In the Emergency Hospital in New York, where the number of confinements averaged 220 annually, the mortality from puerperal septicæmia had been reduced to *nil*, and it was actually the case at the present day that the women confined in lying-in institutions fared better as regards this affection than private patients surrounded by all the aids that wealth can command. The very fact that a place was given to such a discussion as this on the programme of the Association, showed, indeed, that the necessity and efficacy of preventive treatment were not yet as fully appreciated by the profession at large as they ought to be; and he could not but believe that one reason why this was so was because that when antiseptic prophylaxis first came in vogue it was taught that the removal of the carpet, upholstery, etc., from the chamber, and other such extreme measures, were required, and the difficulty of carrying out such a plan of procedure, which was altogether unnecessary, had proved a stumbling-block to many practitioners.

In the first place, both the physician and the nurses should understand the necessity of surgical cleanliness, and soap and water and corrosive sublimate be the means by which this could best be obtained. The hands and forearms should be

washed with bichloride solution, just as if laparotomy were to be performed, and the patient's genitals, abdomen and thighs should also be bathed with it. Vaginal injections with the bichloride solution during labor are a valuable safeguard against self-infection. All unnecessary manipulations, such as attempts to dilate the cervix with the fingers, should be avoided. The complete removal of all the membranes should be carefully looked to in the third stage of labor, and Dr. Lusk said that in order to secure this he always employed a strong light so that he could readily see what he was doing. If it was necessary at any time to introduce the hand into the uterus the cavity should be afterwards washed out with a solution of carbolic acid.

To prevent germs from entering the tissues to dangerous extent, nothing, he said, would seem, at first sight, so efficient as irrigation; but uterine irrigation was not devoid of risk, and this method of procedure really left out of account the great bulk of puerperal inflammations. Experience had shown that if the uterine douche were employed regularly at four hours intervals the mortality would be considerable. It was a point worthy of note that a rise of temperature did not constitute at all the indication for a resort to uterine irrigation. The true indication was a large, flabby uterus, with retained membranes, portions of placenta, or blood-clots.

In using the uterine douche a glass tube was preferable, and carbolic acid solution was the most satisfactory fluid for the purpose. It should be preceded by a vaginal douche, and the quantity of fluid employed should not be large—never exceeding two quarts. The stream should be continuous, and not interrupted. It was important that a free exit for the fluid should be secured, and after the douche had been finished pressure should be made upon the uterus to facilitate contraction and the expulsion of any of the solution that might remain in the organ. He had found it a good plan to have a pencil containing a drachm and a half of iodoform in the cavity of the uterus. The mistake was often made of resorting to the uterine douche too frequently. It was his practice to give a second douche at the end of twelve hours, if it was required; but a third was rarely needed. Dr. Lusk stated that he still had faith in the efficacy of the vaginal douche in almost all the varieties of puerperal fever, as it certainly promoted uterine contraction, and was generally very agreeable to the patient.

In every case of increased temperature after parturition the first thing to do was to make a careful examination of the vulva and vagina, and if ulcerations were found to apply caustic. The use of ice-bags on the pelvic region was generally of service. The chief danger in puerperal septicæmia was from weakness of the heart's action, and this was to be counteracted by alcoholic stim-

ulus, abundant liquid food, and such agents as strophanthus. In all cases of fever following parturition suitable nourishment and alcohol were indispensable. The most careful attention to the hygienic surroundings of the patient was, of course, called for. In the severest cases the ice-coil was undoubtedly useful, and Runge had recently reported very favorable results from the employment of tepid water in lymphatic septicaemia. These results were the more remarkable from the fact that this was the most fatal variety of puerperal fever, and the method was certainly worth trying.

P. B. P.

The Acid Treatment of Yellow Fever and other Fevers, and Scorbutic Conditions Generally.

Dear Sir:—In view of the ravages of yellow fever in the South and elsewhere, it is the bounden duty of physicians to resort to all promising means of relief to prevent and stay its destructive course, and for this purpose I desire to invite attention again to the great value of the acids and acidulous substances in the hygienic and medicinal treatment of all such diseases, and particularly to the superior sanative properties of nitro-hydrochloric acid as a germicide, antiseptic, febrifuge, alterative, hæmostatic, tonic, etc., in contagious, infectious and pernicious fevers, as well as analogous diseases, both internally and externally, as a prophylactic and curative. I can truly testify to the great practical utility of nitro-hydrochloric acid in inflamed and festering throat, diphtheria, scarlet, variolous, puerperal, typhus, ship, malarial, bilious, and other fevers, with their allied toxic, putrid and scorbutic conditions, constitutional and local, but have had no practical experience with it in yellow fever, though I believe it will prove equally efficient therein as in the former. For a general summary of its medical properties and applications I refer to my previous article thereon, in *THE JOURNAL*, vol. x, p. 65.

Both as a preventive and remedial agent nitro-muriatic acid is very efficacious in all such diseases, and may be taken freely in doses of from two to four drops of the strong acid in water or lemonade, through a glass, straw, or other non-corrosive tube, except in edentulous children and adults, by draught or sipping a little at a time, as a refreshing, purifying beverage and healing medicine, according to necessity. It is simple, safe, properly diluted, prompt, active, cheap, and easily procurable almost everywhere. It will not interfere with the usual remedies except in the case of calomel, which it converts into corrosive sublimate, and would thus prove dangerous in undue quantities, but in small doses beneficial, as it is compatible with hydrarg. bichloride, which might be substituted for the calomel, it being also

a powerful germicide, alterative and resolvent, and the two together would be doubly remedial.

Other acids, mineral, vegetal and animal, as muriatic, nitric, sulphuric, bromohydric, phosphoric, salicylic, etc., and lemonade, vinegar, sour buttermilk, with acid fluids, fruit, and food generally, sweetened to taste, are also applicable according to special indications. I firmly believe that the acid regimen and medication will greatly mitigate if not absolutely avert and resolve the scourge of yellow fever, with all other contagious, infectious, and pernicious fevers, and scorbutic conditions, hence strongly urge their use therein, both for preventive and curative purposes.

GEO. J. ZIEGLER, M.D.

Philadelphia, Sept. 30, 1888.

Abortion Laws.

Dear Sir:—In your most able and kindly editorial on "The Ethics of Marriage," in *THE JOURNAL* for September 1, there has, in some way which I cannot understand, crept in a mistake as to the abortion laws referred to in the tabular view in the appendix. I notice that a correspondent in your issue of September 22 naturally feels aggrieved at the seeming aspersion on his State.

This tabular view shows that thirty-eight States and Territories punish the attempt to perform abortion, and no less than eighteen punish advertisements looking to that end. The book has already—since May—passed into a second edition, and at first I thought the tables might have become confused in this, but, referring to a copy lately received from the publishers, I find them all right.

Will you kindly make correction in some future issue of *THE JOURNAL*, and greatly oblige Yours truly,

H. STERLING POMEROY, M.D.

341 Boylston St., Boston, October 12.

BOOK REVIEWS.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, at the Thirty-ninth Annual Session, held at Philadelphia, June, 1888. Published by the Society. 8vo, PP. 355.

The first literary contribution to this volume is the Presidential Address of Dr. Richard J. Levis, on "Traditional Errors of Surgery." Among the traditional errors pointed out are those pertaining to the differentiations of surgical practice called specialism. "The greatest advances in surgical science and art, at the present time, are made through special attention to certain lines of study and practice. This differentiation by specialism is justified by the advance of these lines beyond the possibility of any indi-

vidual practitioner ever comprehending all that can be known in them." Specialism must be intelligently guarded, however. It is a superstructure that must be built on a substantial generalism. As Virchow has said: "No specialty can flourish which separates itself from the common source of science. The great specialists, whose labors have borne most fruit, and added most to the stock of human knowledge, have been the men with a solid foundation of generalism. Dr. Levis recognizes this, and points out that the great danger of specialism lies in *exclusivism*—the study of and practice on distinct organs of the body without reference to their mutual and intimate relations and interdependence.

Dr. Levis then refers to the violent opposition to anæsthesia in 1846, to the denunciation of ovariectomy and ovariectomists, to the tardy recognition of Lister's principles of antiseptic surgery, and to the general tendency to make complicated surgical instruments and apparatus.

The addresses in medicine, by Dr. Edward R. Mayer, of Wilkesbarre, in Hygiene by Dr. Traill Green, of Easton, in Obstetrics by Dr. Parvin, in Mental Disorders by Dr. H. C. Wood, and in Otology by Dr. Alexander Randall, are well worth reading.

Dr. Frank Woodbury contributes a paper on "The effervescent form for the administration of certain remedies;" Dr. R. Lowry Sibbet one on "Decisions of the Courts relating to the Registration Act of 1881," in which he urges the necessity of a State Board of Medical Examiners. "The Proposed State Board of Medical Examiners" is the title of a paper by Dr. John H. Packard. Dr. Lawrence F. Flick contributes an admirable paper on "The Contagiousness of Phthisis," though we may not be prepared to accept his conclusions. A very interesting paper is one by Dr. Hugh Hamilton, on "The Chemical Factor in Disease." Dr. Mordecai Price has a short paper on "Removal of the Kidney for Traumatism," and Dr. John B. Deaver one on "Nephrectomy for New Growths." Dr. S. F. Davis makes an interesting report of a case of *removal of the uterine appendages as a remedial measure*. Dr. J. H. Musser read a memorandum of the life and works of Benjamin Rush. Dr. William F. Waugh read a paper on the "Specific Treatment of Typhoid Fever"—by sulphocarbonate of zinc, the use of which he believes is a legitimate deduction from the pathology of the disease.

Dr. Thomas D. Dunn read a paper on "The Hypodermic Use of Cocaine in Migraine and Bronchial Asthma," Dr. E. A. Wood, of Pittsburgh, one on the "Irrational Use of Commercial Pepsin," Dr. J. Chris. Lange, of Pittsburgh, one on "Some Influences of Diseases upon the Mind," Dr. Louis J. Lautenbach one on the "Prevention

of Ear Disease, by Care exercised particularly in Childhood," Dr. Charles H. Burnett one on "Aural Vertigo," one on "Gouty Sore Throat" by Dr. Harrison Allen, Dr. A. G. Heyl one on "Two Retinal Symptoms in Brain Disease," and Dr. Chas. M. Dulles made a "Report on Hydrophobia."

The Pennsylvania State Society has just grounds for pride on account of the unusual excellence of the papers in this volume.

The Physicians' Leisure Library. **THE INFECTIOUS DISEASES.** By CARL LIEBERMEISTER, Professor of Clinical Medicine in Tübingen, Germany. Translated by E. P. HURD, M.D., Newburyport, Mass. With Notes and Appendices. Small 8vo, 2 vols., paper, pp. 141, 269, Detroit: Geo. S. Davis. Chicago: W. T. Keener. Price, 25 cts. each.

Dr. Hurd has contributed in no small degree towards bringing the writings and teachings of foreign medical men within the reach of Americans that do not read a foreign language, and his work has the peculiar merit of instructing the reader without allowing him to be aware that he has a translation.

The first volume of the work before us deals with the miasmatic and miasmatic contagious diseases; intermittent fever and typhoid fever. It should be said that the scope of the work is "The Pathology and Treatment of Infectious Diseases." Every one that has read anything from Liebermeister's pen knows that he is one of the strongest adherents to the germ theory of disease. To prevent making the present volumes too bulky the translator has omitted Liebermeister's chapter—a long one—on the nature of infection. In his appendix to the chapter on Malaria Dr. Hurd has wisely added some notes setting forth the treatment of intermittent fevers as practiced in this country; and as appendices to the treatment of typhoid fever he has made some notes in regard to the cold-bath treatment of typhoid fever, and has added a summary of the treatment of this disease in some of the principal American Hospitals.

The second volume deals with measles, scarlatina, smallpox, vaccinia, varicella, rubella, diphtheria. Dr. Hurd has also added to the value of this volume by notes.

On the whole one must commend this work from the pen of one of the masters of medicine, and so intelligently edited.

OPHTHALMIC SURGERY. By ROBERT BRUDENELL CARTER, F.R.C.S., etc., and WILLIAM ADAMS FROST, F.R.C.S., etc. With a chromo-lithograph and 91 engravings. 8vo, pp. 554. Philadelphia: Lea Brothers & Co. 1888. Chicago: A. C. McClurg & Co.

The authors have divided their book into fifteen chapters. The first deals with the anatomy and

physiology, the second with the examination of the eye. The other chapters are devoted to the affections of the various tissues of the globe and its adnexia. An appendix contains Snellen's Distance Types, Reading Types, Army and Navy Test Dots and Formulæ.

The book is well written. It is concise and abreast of the times. Drs. Carter and Frost have not limited themselves to outlining the successive steps in the advancement of our science, but discuss leading questions and clinch arguments by an array of numerous interesting questions and opinions, the result of long experience.

Dr. Carter is opposed to the new method of after-treatment in cataract extraction. He claims it is only a resuscitation of a procedure in vogue twenty-five years ago, which was condemned by Graefe, the originator of the pressure bandage. The author says, "The advantages to a healing wound of complete shelter and of gentle, uniform support is self-evident." The present method of operating for cataract without iridectomy is also denounced as an error and a departure from a reliable and safe method.

In the chapter devoted to advancement of the recti muscles allusion is made to the operation devised by Dr. Prince, of Jacksonville, Ill., erroneously located in Philadelphia. Prince's plan is slightly modified by the employment of only one suture, which after having transfixed conjunctiva and sub-conjunctival tissue is passed from without inwards through the upper part of the muscle and then again from within outwards through the lower part of the rectus. This brings the vertical portions of the thread, forming a rectangle, underneath the conjunctiva, the horizontal parts above that tissue. The ends of the thread are then tied, advancing the muscle and entirely covering the seat of operation.

The work abounds in good practical suggestions. It will prove especially welcome to the student owing to its completeness and terseness. It bears the stamp of originality, and consequently will be interesting and useful to physicians and specialists.

A MANUAL OF GENERAL PATHOLOGY. Designed as an introduction to the Practice of Medicine. By JOSEPH FRANK PAYNE, M.D., Oxon, F.R.C.P., etc., with 153 Illustrations. 8vo, pp. 560. Philadelphia: Lea Brothers & Co. 1888. Chicago: A. C. McClurg & Co.

The plan of this work is somewhat different from others that have the same title. The first half of the volume is devoted to a brief review of the topics usually described in works on general pathology, and the second half to a description of the causes of disease and their mode of action.

In the first portion we are glad to see chapters devoted to "pathological relation of blood-pressure" and "fever." These are subjects too

frequently omitted from similar works. Inflammation is not considered by the author a conservative process. In his opinion, "inflammation is damage." The chapter on fever is a brief but fair review of the modern literature of the subject.

The second portion deals with topics of very great interest. Although nearly one-half of the volume is devoted to it, many of the topics are discussed too briefly, and many should be added to make it complete.

This work does not duplicate any other. It is excellent for what it purports to be, a Manual of General Pathology designed as an INTRODUCTION to the Practice of Medicine. It should not be used to displace other text-books on Pathology, but rather to compete with the early chapters of works on Practice of Medicine, which have been entitled by the older writers principles of medicine.

THERAPEUTICS. Its Principles and Practice. By H. C. WOOD, M.D., LL.D., etc. Seventh Edition of a Treatise on Therapeutics rearranged, rewritten and enlarged. Philadelphia: J. B. Lippincott & Co. 1888. Chicago: W. T. Keener.

This work of Dr. Wood's has become a classic, and the appearance of each new edition is looked for by the profession and by students of medicine with pleasure, for as an authority it is unquestioned. The present edition is so different in title, arrangement, and in the extensive revision of old matter and addition of new, that it marks an epoch in the history of the work.

So well known is this treatise that detailed notice is not necessary. We will remark only on a few of the most conspicuous changes. The title of the book is the first of these changes to attract attention. Very much more space is allotted to measures of treatment not medicinal than in former editions, and this part now constitutes the first division of the work instead of the last.

The classification of drugs has been considerably modified. For instance, quinine appears under the head of antiperiodics instead of tonics, and a group of antipyretics follows that of antiperiodics. It need not be said that most excellent descriptions of the physiological and therapeutic action of all the new drugs that can be considered reliable have been introduced.

MISCELLANEOUS.

TREATMENT OF FOUL SHIPS.—The Surgeon-General of the U. S. Marine-Hospital Service has issued the following circular to Medical officers of the Marine-Hospital Service, and others whom it may concern:

In order to stimulate ship-masters to aid in securing a clean ocean-going fleet, the following regulation concern-

ing the treatment of foul ships is hereby adopted, and will be observed at all National Quarantine Stations :

1. When a vessel arrives at any National Quarantine Station from an infected port, and requires disinfection, she will be subjected to *ordinary disinfection*, as provided in former regulations.

2. When any vessel shall arrive at a National Quarantine Station in such foul condition as to render her dangerous from a sanitary point of view, and is found to require cleansing and disinfection, having at any former time within one year been subjected to ordinary disinfection, such vessel will be required to undergo *extraordinary disinfection*, which, in addition to the ordinary measures will include holy-stoning, scraping, the taking out of rotten wood, a second disinfection, and interior repainting, all of which will be required before granting a certificate of free pratique.

CREMATION IN BUENOS AYRES.—During the past year 993 bodies were cremated in Buenos Ayres, of which number 742 were of persons dead of cholera, small-pox, and other contagious diseases.

THE REFORM OF CIRCUMCISION.—The Israelites of Paris recently appointed a commission of surgeons under the presidency of Zadoc Kahn, the Grand Rabbi, to consider what modifications might advantageously be introduced in the ritual of circumcision. They have published rules looking to more thorough cleanliness of the operator, of his instruments, and of the infant, and have decided to do away with the sucking of the wound after the operation.—*The Annals of Hygiene*, Oct., 1888.

A FEE OF £10,000.—Surgeon-Major Freyer, M.D., I.M.S., has received a fee of one lakh of rupees (£10,000 sterling) from H.H. the Nawab of Rampur, as a token of esteem as well as an acknowledgment of his valuable services in the successful treatment of himself and General Azimuddin Khan, the popular head of the Administrative Agency of the State, who had suffered for nearly three months from a malignant rheumatic fever; his recovery has been the occasion of great rejoicing at Rampur. This is said to be the largest fee ever received by a medical practitioner in India, and probably has never been exceeded in any country.

MEDICAL EDUCATION OF CHINESE IN CHINA.—Dr. W. W. Myers' three pupils, who have completed a course of four years' instruction under his direction at Formosa, recently passed an examination in Shanghai. The result, with the percentage gained at the primary examinations in Hong Kong and Shanghai, was as follows: Goh Kit-moh, 72 per cent.; Chan Ching-hai, 68 per cent.; Li Tsun-fan, 66 per cent. Following the presentation of diplomas a detachment went through ambulance manoeuvres, stretcher drill, dressing the wounded, and applying splints adapted from the Chinese umbrellas.—*The British Medical Journal*, Oct. 6, 1888.

DR. CHARLES W. PURDY will return from Europe about November 1.

DEATHS FROM CHLOROFORM.—During 1885, 1886 and 1887, nine persons died in Australasia while under the influence of chloroform, four of the cases being in Sydney.

PROFESSOR FR. SCHULTZE, of Dorpat, will take the chair at Bonn made vacant by the death of Prof. Rühlle.

DR. PAGLIANI, Professor of Hygiene in Turin, has been appointed Director of the Institute of Experimental Hygiene in Rome.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from October 6, 1888, to October 12, 1888.

Major John W. Williams, Surgeon, on duty with batal-

lion on Second Artillery, now at Ft. Wadsworth, New York Harbor, is granted leave of absence for one month, with permission to apply to the proper authority for an extension of one month. Par. 1, S. O. 209, Hdqrs. Div. of the Pacific, Governor's Island, New York City, October 4, 1888.

Major Frank Meacham, Surgeon U. S. Army, died at Ft. Douglas, Utah, October 9, 1888, at 1:20 P.M.

By direction of the acting Secretary of War, the following named officers of the Medical Department will report in person, on the dates set opposite their respective names, to the President of the Army Medical Examining Board, Army Building, New York City, for examination for promotion: Capt. James C. Merrill, Asst. Surgeon, October 16, 1888; Capt. George McCreery, Asst. Surgeon, October 16, 1888; Capt. Richard W. Johnson, Asst. Surgeon, October 9, 1888. Upon completion of their examination the officers named will rejoin their proper stations. Par. 5, S. O. 231, A. G. O., October 4, 1888.

Capt. William B. Davis, Asst. Surgeon U. S. Army, is granted leave of absence for six months, by direction of the acting Secretary of War. Par. 12, S. O. 232, A. G. O., October 5, 1888.

Capt. John M. Banister, Asst. Surgeon, leave of absence granted in S. O. 210, September 10, 1888, from this office, is extended one month, by direction of the acting Secretary of War. Par. 2, S. O. 232, A. G. O., October 5, 1888.

By direction of the acting Secretary of War, Capt. Louis H. Maus, Asst. Surgeon, is relieved from duty at Ft. Schnyler, N. Y., and will report in person to the commanding officer, Ft. Porter, N. Y., for duty at that post. Par. 10, S. O. 236, A. G. O., Washington, October 10, 1888.

Capt. William G. Spencer, Asst. Surgeon U. S. Army, is granted leave of absence for two months, by direction of the acting Secretary of War. Par. 11, S. O. 236, A. G. O., Washington, October 10, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Two Weeks Ending October 13, 1888.

Medical Inspector Adrian Hudson, ordered to Naval Hospital, Mare Island, Cal.

Medical Director A. L. Gihon, detached from the Naval Hospital, Mare Island, Cal., and proceed home.

Medical Inspector N. L. Bates, detached from the "Pensacola," and placed on waiting orders.

Surgeon W. G. Farwell, ordered to U. S. R. S. "Franklin." P. A. Surgeon H. B. Scott, detached from the New York Navy Yard, and ordered to the Naval Hospital at Mare Island, Cal.

Surgeon A. F. Magruder, ordered to duty at Headquarters of the Marine Corps.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Four Weeks Ending October 6, 1888.

Surgeon George Purviance, to proceed to Washington, D. C., for special duty. October 3, 1888.

Surgeon G. W. Stoner, detailed as chairman of board to select site for marine hospital at Evansville, Ind. October 5, 1888.

Surgeon C. B. Goldsborough, leave of absence extended fifteen days on account of sickness. September 28, 1888.

Asst. Surgeon Seaton Norman, detailed as recorder of board to select site for marine hospital at Evansville, Ind. October 5, 1888.

Asst. Surgeon J. B. Fattie, to rejoin station at St. Louis, Mo. October 5, 1888.

Asst. Surgeon G. M. Magruder, to proceed to Way Cross, Ga., for special duty. September 15, 1888.

Asst. Surgeon H. D. Geddings, to proceed to Camp Perry, Fla., for special duty. September 15, 1888.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, OCTOBER 27, 1888.

No. 17.

ORIGINAL ARTICLES.

THE MANAGEMENT OF EXTRA-UTERINE PREGNANCY.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY A. W. JOHNSTONE, M.D.,
OF DANVILLE, KY.

The history of the management of extra-uterine pregnancy, like every other conception which has finally resulted in good to the human race, begins with very crude—I might almost say utterly empirical manœuvres. Slowly it has emerged from its horribly uninviting chrysalis to its crawling caterpillar stage, which is almost passed, and its bright-winged life has now really begun.

Passing over without mention the mistakes and blunders of those who used to evacuate the amniotic fluid, and those who once injected substances into the gestation sac, as well as that later and better procedure, elytrotomy, let us go at once to the discussion of the only two methods which now receive much recognition from the medical world, which are electricity and abdominal section.

Let me state clearly and distinctly in regard to the electric current in all its forms, that I believe it wrong in principle, dangerous in practice, and frequently disastrous in its final results.

One of the assumptions of the originators of the electric treatment was that all one need do to stop the development of the gestation sac, was to kill the foetus, believing that on its life alone depended not only the secretions of the amniotic sac, but the growth and development of the placenta. That they in reality were nothing but what their ordinary names, foetal appendages, indicate, and that, like the nails and hair to the general body, the death of the embryo meant the immediate dissolution of all. This, however, thanks to Berry Hart, Knowsley Thornton and Tait, we know is not true, for the placenta frequently will live on, and continue developing, long after the premature death of the foetus.¹

This agrees most fully with all my studies on the endometrium, the published results of which

are contained in my papers on "The Menstrual Organ," "The Endometrium in the Cycle of the Gut," and "The Infantile Uterus." The central idea that runs through them all is, that the placental matrix has an entirely separate and distinct physiological existence from all other organs, and that its function is to take up and nourish the ovum, which is done entirely independently of control from any other source than its own nerve supply.

It is true this nourishment cannot be done until the ovum is present; it is also true that the mill cannot grind without the wheat, but no one would think for an instant that the wheat controlled the movements of the mill. In the intra-uterine condition we have a totally different state of affairs from that of the ectopic form. In the latter we have the placenta developing from the adenoid layer of the tube, but we do not have it surrounded by a powerful muscular sentinel, who is ready, on the slightest indication of anything wrong, to expel the whole of the new development.

How frequently it is our experience to find signs of life in only two or three months' abortions; so much so, that it is an egregious blunder to think every miscarriage is due to some error either in the foetus or placenta, for experience has long since taught us that repeated abortions are due as much to some conditions in the uterine wall, as they are to diseases of either the foetus or placenta.

In extra-uterine pregnancy, however, an abortion is impossible. The placenta, once started, must go on until it has finished its physiological life, the limit of which is nine months. It is the gradual death of the placenta that causes the terrible struggles of the extra-uterine foetus, at the close of the false labor, which, so far as the child is concerned, is nothing more or less than a slow asphyxia.

Thus I am thoroughly convinced that, to stop the growth of the ectopic gestation sac, it is necessary not only to kill the foetus, but also to shock the pelvic sympathetic so thoroughly as to cause an interference with its control and produce what, in intra-uterine conditions, would result in a menstrual decidua. Thus, gentlemen, you see why it is that the reported cases of electric treatment of extra-uterine pregnancy are so stubborn in

¹ Tait. American Journal of Obstetrics, April, 1888, p. 394. Berry Hart. London Obstetrical Society.

their resistance, and you see the reason for the necessity of so many repetitions of those terrible doses of electricity before there is any appreciable diminution in the tension of the sac. In all probability most children are killed by the first application, but it is the placental membranes which keep up the secretion of the amniotic fluid, and it is them you must kill before any diminution can be looked for.

Thus it seems to me to be fully demonstrated that it is not the foetal, but the maternal nervous system which must be overpowered by the battery, and for this reason I believe that the whole practice is founded on a dangerous error. Another of their assumptions, from personal experience, I can assert most positively is wholly wrong, and that is as to what the so-called "premonitory symptoms" mean.

On page 293 of the *Transactions of the American Gynecological Society*, for 1887, you will find a discussion of this subject, introduced by our honored chairman, in which all but Dr. J. E. Janvrin concurred in the belief that the "colicky pains," and "first slight shocks," are due to contractions of the tube, or movements of the foetus. He, however, took the ground that they are due to the giving way of some structure, and that in most cases it is accompanied with hæmorrhage to a greater or less degree. His speech closed the half hour allotted for the debate of papers, or I would be on record beside him. But what our President then cut me off from I here wish to say at length, and that is, that Dr. Janvrin's ideas are correct.

I have now, either as assistant or principal, officiated on about six ruptured extra-uterine pregnancies, and in every one of them we found clots of different ages. My own case, published in the *Medical Record* of February 26, 1887, showed this to a very striking degree, but to make sure that I was correct about the cases in which I assisted Mr. Tait, I wrote to him for information on that point, and here is his reply:

"7 THE CRESCENT, BIRMINGHAM, APRIL 12, 1888.

"My dear Johnstone:—To my horror I have just found your letter of February 26, under a mass of papers in my desk, unanswered. It is, I find, the most fascinating occupation that gynecologists can indulge, and just in proportion to their want of experience they dogmatize on such points as this you ask information about. As a rule, there are no symptoms of tubal pregnancy sufficient to call for medical interference, or even examination, until the time of rupture. The proof of this is that, now having seen seventy cases, I have only once had occasion to make an examination before the period of rupture, and then the symptoms were those of ordinary tubal occlusion, nothing to indicate pregnancy. The next time I saw the patient the tube had ruptured. The rupture I

diagnosed, but I thought it was a pyosalpinx which had burst, and caused general peritonitis. I operated immediately and found a large blood clot in the abdomen. I removed the ruptured tubal pregnancy and the patient got well.

"Now if there is anybody else with an experience as large as this who can give evidence to the contrary, we may begin to listen to him, but until such evidence appears, I think it may be reasonably supposed that the opportunities for diagnosis of tubal pregnancy, before rupture, are very rare, and the difficulties of recognition immense. In my preparations the point which you speak of is abundantly proved. There are successive hæmorrhages which leave their relative dates recorded in the altered blood clots. This you saw in your own experience with me here. I don't know how you are getting on with this subject on your side, but here we are going through the stages of the old story. At first the senile authorities stated, of course, that our cases never occurred, and now they are contradicting those of us who have had experience upon the most primitive facts of the record, utterly unable to unlearn their old notions, though following us in the new. It is very likely, of course, to be the same with you.

"I am much interested in what you say about the rush for electrolysis in your country, because here it is already exploded, and will rapidly subside into its original position of rampant quackery. You are at perfect liberty to make any use you like of this letter. Yours ever,

"LAWSON TAIT."

This, I think, places it beyond all doubt that Dr. Janvrin is not alone in the experience which he reports. But to me it is the rule, and not the exception, that when we are first called to cases a slight rupture has already begun. But, as in the one out of seventy which Mr. Tait saw before rupture, it is almost impossible to tell whether the tube contains pus, serum, or a foetus. So, in the use of electricity, we are not only almost sure to begin its use in cases where rupture has already begun, but we can never be absolutely sure that we are not passing it through some inflammatory mass, like that case in which one of my critics² deluded himself into thinking that he had absorbed the whole of a five months' gestation sac, and all in the space of three weeks. Several less lucky cases were brought out in the debate on this subject before the British Medical Association, at its meeting in 1886. Electricity was used on inflammatory masses, and instead of absorption, suppuration took place, and prompt laparotomies were all that saved the patients.

Having, as I think, pretty fully shown the errors on which its practice is based, let us turn to the immediate dangers of its use.

Fortunately, the aggregate of the cases on

²The American Journal of Obstetrics, August, 1887, p. 818.

which it has been tried is small, or before this we would have heard of a case of syncope, but to get it, all we have to do is to continue passing these powerful currents through the pelvic sympathetic, and sooner or later we will be sure to find a weakened heart that will not stand it. How many unreported cases like that of Dr. Janvrin the world has contained no one can tell. How many suppurations of effused blood, inflammatory masses, peritonitis, and the like, have been justly chargeable to the electric current, is a question that will probably never be solved, but from Dr. Chadwick's and others' experience with Apostoli's method of managing uterine myomata, to say the least of it, it is a condition in which we would not be at all surprised at having inflammation as a result.

An extra-uterine pregnancy never occurs in a normal tube. Whether you accept the old-time doctrine, that it is always due to a tubal occlusion, or whether you take the theory that it is frequently caused by desquamative salpingitis, which strips the tube of its ciliated epithelium, laying bare its subjacent adenoid layer, which not only robs the ovum of one of its means of transportation, but exposes to its stimulation the natural placental matrix; in either case, we have the gestation sac contiguous to some old inflammatory centres.

We have long since known that weak currents have a considerable absorptive power, but we have also known that strong ones are extremely irritating. So it seems to me that he who passes the full force of a 20-cell battery through a fresh effusion of blood, among a lot of old adhesions and cicatrices, with a possibility of a slight leakage of amniotic fluid, need not be in the least surprised to find a violent inflammation following his manipulations.

But granting that he does find his case before any blood has been effused (which remember, in Mr. Tait's experience has occurred but once in seventy cases), to shake up the smouldering embers of an old conflagration by what is almost a caustic application seems to me, to say the least of it, an extremely daring procedure. It is true that some cases have stood it, but it is also true that pregnant women have been known to fall from the third story, and repair double fracture of both femurs, without aborting, but still we do not consider it exactly the thing to pitch them out of these windows, just to see if they can all stand it.

A case has already been recorded in which a slight rupture was the means of the diagnosis of the case, and in which, in spite of several applications of the electric battery by the best electrician in New York City, the case went on to final rupture and death. I refer to the case of Dr. Janvrin, reported in the *Transactions of the American Gynecological Society* for 1886, and what I believe is that, unless we stop the use of the electric battery, it is only a question of time until

others will be placed beside it. Thus my reasons for believing it is immediately dangerous in practice are, that weakened hearts will not stand the currents we are forced to use, that we rarely ever find a case until a greater or less degree of rupture has taken place, and that the action of these terrible currents on the sac invites the completion of the tears, and that the risk of exciting immediate and violent inflammations and suppurations by thus roughly handling tissues which are already predisposed to them, is, to say the least of it, a very strong possibility.

But the greatest objection of all to the use of the electric current is its remote results. Before we knew anything about tubal diseases, or before electricity was even heard of, it was an established fact that a woman with a dead fœtus in her belly was never out of danger; and now, after all the light that has been thrown on these troubles by the exhaustive study of the various pelvic inflammations, leaving out of sight all the invalidism which they cause, we know that, no matter how many years the mother may survive the fœtus, she is never entirely free from the risk of a septic infection until she is laid away to her final rest.

Cases have been reported of the suppurations of lithopædia after years of apparent quiescence, it is true that such suppurations are very rare, but it is also true that lithopædiæ themselves are now a days seldom formed; many of what used to be called lithopædia we now know to be dermoid production of one sort and another, and by the more advanced methods of managing the pelvis, the errors that lead up to them in Europe are now found and corrected before they are produced, but the mere fact of one of the ultimate aims of electrolysis, being in itself a constant menace to life, seems to me goes a long way to undermine the whole practice.

Long, however, before the fœtus can possibly be calcified is the greatest period of danger. Statistics, like tombstones, can be made to serve almost any purpose, and for that reason I have so far spared you, and do not now propose to inflict upon you any long tables with biased conclusions cut to fit my own ideas, but there is food for thought on this subject which I will give you in a most condensed form from a paper read before the Chicago Gynecological Society last June, by Dr. Bayard Holmes. It is his statistics, which I especially want. He is authority for saying that "Kiwisch collected a hundred cases of extra-uterine pregnancy of all kinds, and it appears from the summary of these cases given by Bandl that about 37 per cent. of these fœtuses became infected, 17 died of peritonitis, more or less acute, four died of peritonitis after the fœtus had long been retained, nine died through long continued suppuration and perforation, seven recovered after spontaneous elimination. Archer collected 132 cases out of which

about 47 per cent. became infected; Parry's cases show about 28 per cent. of those which had passed full term suppurated. During the first year 12 per cent. of the whole number terminated in suppuration, during the second year 5 per cent., during the third year $2\frac{1}{2}$ per cent. After this time less than 2 per cent. were infected each year." This proves conclusively, to me at least, that while the great majority of suppurations occur shortly after the death of the fœtus, and that though the ratio of deaths diminished rapidly after the so called quiescent state has been reached, still the woman must carry a constant source of danger throughout all the rest of her existence, which may explode at almost any time.

Electricians may say it is not fair to quote such statistics on us, for we never practiced electrical treatment, after the fifth month, and that it is only when the pregnancy is small, before the osseous tissues begin to take the place of the cartilaginous, that we hope to get rapid absorption.

In answer to this, though it can be easily shown that you do get suppurations, in Dr. Lusk's historic paper before the British Gynecological Society two years ago, are two deaths of infants at five months, on one of which the electric battery had been used, both of which sloughed out. In the debate referred to on this subject, before the American Gynecological Society last year, Dr. Chadwick, of Boston, reported another, with like results, in which the electric battery had been used, and what is stranger still, the statistics just referred to by Holmes embrace all kinds of extra-uterine gestation. One more entrenchment the electricians may take, and that is in that old exploded idea, that the safest way of getting rid of a dead fœtus is by suppuration. This Lusk shows to be utter folly. So much for the absolute risks to life, but there is still another (and to me an insuperable objection) and that is the months—and even years of invalidism which this method must entail. Now a days, when we have no hesitancy in removing incurably diseased tubes and ovaries, it seems almost like a crime, to allow a woman to carry a tube, which is not only a constant menace to her life, for months a source of pain and wretchedness, and which for years will keep her from her social duties, to say nothing of the repeated monthly congestions and second pregnancy would be almost the signature of her death warrant. Thus, gentlemen, it seems to me, that the leaving of such a condition in any stage of development, can be fraught with little but mischief to the mother, and all her associates.

I must unhesitatingly say that all extra-uterine gestations, up to the fifth month, ought to be removed through an abdominal incision, as soon as found. The very cases, which the advocates

of electricity claim the most for, are the very ones which would be the most easily and safely removed by laparotomy. In proof of this I refer you to Tait's statistics, for I am sure that no other process could possibly have saved as many women, as this last method, which has almost reached perfection at a single bound.

Where a complete rupture has taken place, that is where a vessel large enough to bleed a patient to death, has given way, and which is not held in check by some rapidly adhesive form of peritonitis, not even the most enthusiastic admirers of electricity would for a moment think of using galvanism or of doing anything but following Tait's lead, and when they fully realize that the initial shocks are due to a lighter form of the same condition, I believe they would hesitate before passing their powerful currents through it.

Just on this point let me say that I believe a large proportion of the difference between Tait and his opposers is a misunderstanding in the time when the tear takes place.

Tait knows from his operative experience that the premonitory shocks are nearly always due to a greater or less degree of rupture, and acting on this knowledge, *operates at once*, classing all his cases under the one head of rupture.

The opposite side of the debate, though, assume that these alarming symptoms are due only to contractions of the Fallopian tube, but when they realize, what in this paper I have tried so strenuously to show, that they are in reality dealing with rupture, I believe they will find themselves not so very far after all, from the ground on which Tait has built an everlasting monument. Though leading the van, Tait is not alone in successful European work, on extra-uterine pregnancies, for Berry Hart, Martin and others have reported almost equally good results, and I am glad to say that the profession on this side of the Atlantic are waking to the necessities of the case.

Since the report of my success, cases have been reported by S. C. Gordon, of Portland, Maine; Joseph Price, of Philadelphia, Pa.; William Gardner, Montreal, Canada; G. M. Tuttle, of New York City, and Charles B. Penrose, of Philadelphia, all of which go to show that there are laparotomists in this country that can do the work successfully when they have the opportunity.

But for the exact status of the operation in the different countries, let me refer you to that most invaluable work of Greig Smith on Abdominal Surgery.

Up to the period of the fifth month, I doubt whether elyototomy ought ever to be done, and after that time I am sure its usefulness will be extremely limited, but we may occasionally find badly neglected suppurating cases, in which we are bound to open them, at the places where they

are about to point, and this will sometimes necessitate an elyototomy. But as the world grows wiser, I hope these purulent cases will become like vesico-vaginal fistula, and other conditions which are plainly due to neglect, an almost vanishing quantity. The results of operative interference on a viable foetus, have so far proved disheartening, and as to just what should be done with them, even our most advanced thinkers have not settled to their own satisfaction. It seems to me though, that the longer we let the placenta alone, the wider it will spread out from the centers at which it began, the more numerous its adhesions will become, and the richer will be its blood supply. It is true that a very few of these placentae reach a higher organization, and when left behind after a laparotomy are gradually absorbed. But their number is so extremely small that I do not believe we ought ever to leave them behind, where it is possible to remove them. My rule, until I see some good reason for changing it, will be in all forms of ectopic gestation, to operate, as soon as I find them, and by these means hope to give the mother the best possible chance.

Martin, of Berlin, has certainly given us, in his one successful "primary" laparotomy, a rule which I think we ought always to attempt to follow, and that is in controlling the blood supply to the placenta, we ought always to apply the ligature to the proximal, and not to the distal part of the vessel.

It is true that in some cases this would be almost impossible, but in many others we would be able to get at the broad ligaments, and thus cut off the blood current before it reaches the soft, treacherous tissue, which lies just underneath the placenta. In closing let me state that after a careful study of the subject, I am convinced that laparotomy is the only thing which ought ever to be thought of as a cure, for extra-uterine pregnancy, and that the time to operate is as soon as possible after its discovery, and if we do not use exploratory incision to clear up our doubtful cases, we are in great danger of letting our patients die without thoroughly understanding the cause of death.

When I began the preparation of this paper I thought I was almost alone in this country in the extreme ground, that a tube containing a small foetation, ought to be removed as soon as discovered without any further meddling, but I have just seen Dr. Janvrin's paper, of April 16th, before the New York County Medical Association, which shows that he, and quite a number of the younger members of the profession, are taking the same ground that this paper advocated, and speaks of two cases which have already been done by Drs. Howard, Kelly, and Joseph Price, of Philadelphia.

I do not believe the mortality on extra-uterine

pregnancies, between the sixth and tenth week—where no rupture has occurred—in the hands of first class operators with the proper surroundings, would be as much as one per cent. The truth is the proper management of extra-uterine pregnancy, is still in its infancy, and is not yet free from the encumbrance with which ovariectomy had so long to struggle. It took years, I might almost say generations, for the ovariectomist to learn not to meddle with his cases, until he was ready to take them out, and they have hardly yet got past the tapping age, but when they have reached those Arcadian days when all ovarian tumors are operated on while the patients are strong and well, by trained men, (who do not rush into it merely as a means to advance them in other branches of their practice) but who have given up to it, not only their time, their money and I might say their very souls, I hope the electric battery will have been relegated to its proper fields, and its use as a feticide will be remembered merely as one of the transitional stages, in the developing management of extra-uterine pregnancy.

Danville, Kentucky, May 5, 1888.

THE GREAT VALUE OF A 0.25 D. CYLINDER IN THE RELIEF OF HEADACHE AND EYE PAINS.

Read in the Section on Ophthalmology and Otolaryngology, at the Thirtieth Annual Meeting of the American Medical Association, May, 1888.

BY JULIAN J. CHISOLM, M.D.,

PROFESSOR OF EYE AND EAR DISEASES IN THE UNIVERSITY OF MARYLAND, AND SURGEON-IN-CHIEF OF THE PRESBYTERIAN EYE AND EAR CHARITY HOSPITAL OF BALTIMORE.

In the selection of cylinder glasses, there is a disposition on the part of many to ignore the lesser degrees of astigmatism, as minor eye defects not worthy of recognition. I have heard often the expression from ophthalmic surgeons, that they never prescribe less than 0.5—D. lens, and am led to the belief that a very large number of young patients are allowed to suffer with eye faults uncorrected, because of this opinion. My practice and teaching for many years has been to recognize irregular refractive faults, however small, and by so doing give great comfort. In fact, I find as the result of my own experience, that these lesser faults are often the most complained of, and that the most marked and annoying reflex troubles are occasioned by the *smaller*, and not by the greater degrees of astigmatism. Pain not restricted to the eyes and forehead, but extending down the spine, disturbing the stomach, and even affecting the limbs, anxious troubles which have resisted the most thoughtful care of the physician and the skill of the gynecologist, have been removed promptly by the use of a 0.25 cylinder lens.

Annoyances from the lower degrees of astigmatism are especially met with among the advanced pupils of the high schools, and more especially in girls. These are often hereditary faults found in the parents as well as in the children: never complained of by the parents who have no cause for eye straining, but brought out conspicuously and annoyingly in the children under forced education. Under the long continued pressure of eye work, which the education of the period demands, very small faults will cause an accumulation of irritation which suddenly explodes, and forces a suspension of study. The continued eye tax of from ten to fourteen hours in the twenty-four will cause the eyes to break down; and then, when the eyes become irritable, even a few minutes of use will bring on eye pains with headache. Eyes heretofore very strong become so sensitive that exposure to daylight is painful, necessitating the use of smoked glasses.

Most of these students have $V. = \frac{2}{3}\%$, and can read No. 1 of the test types with readiness. Convex glasses would blur distant vision; a very weak concave might sharpen distant outlines. *The painful eyes of these patients, cured by weak cylinder glasses, show that the apparent perfect vision $V. = \frac{2}{3}\%$ is not incompatible with annoying astigmatism, the writings of specialists to the contrary notwithstanding.*

The usual history of such students is, that up to within a short period, they had perfect control of their eyes, and were in the habit of reading all day and half of the night, with only short intervals of rest. Recently when preparing for an examination, which called for an extra amount of application, their eyes have given way. Now they cannot read for ten minutes without pain and headache.

With a great many of these students the continuous use of a 0.25 cylinder, usually a concave lens, set horizontally, will promptly restore all suspended privileges, and in a very few days enable full work to be resumed. Experience also teaches the wearer of these spectacles, that as long as hard work is continued these glasses cannot be dispensed with, even for a moment, without the return of eye and head pains.

It is very interesting to witness how rapidly the reflex irritations subside, when the irregular movements of the accommodating muscles are no longer called into play. Persons who could not look out into the sunshine before the consultation, find the weak cylinders and their restfulness more comfortable than the smoked glasses which they had been wearing.

It is also an experiment of very great interest in such small degrees of astigmatism as 0.25 cylinder will correct, the more especially if the angle of the fault be an oblique meridian, to note how the reversing of the lens, say from 30° to 150° , will

instantly bring on eye pains and head confusions, and they become so uncomfortable that the patient cannot stand them. Then note the expressions of satisfaction when the lenses are replaced in their proper position. This experiment alone will attest the influence which the very weak cylinders exercise towards the comforting of aching eyes and heads. Even during the office consultation a difference is felt in loss of comfort as soon as the cylinder glasses are removed from the eyes.

I find myself frequently discarding + spherical glasses given for the correction of muscular accommodative astheropia, because with $V. = \frac{2}{3}\%$ the true cause of the painful eyes and head aches, which had continued, notwithstanding the use of the + s., a low degree of astigmatism, had not been found out, or had not been considered worthy of recognition by the specialist who preceded me in the treatment of the case.

I also find myself frequently substituting the 0.25 cylinder for the 0.5, which is the weakest lens that many ophthalmic surgeons prescribe. Patients who cannot use their eyes for even a few minutes with the 0.5 — c., can read by the hour with the 0.25 c. When these patients are examined by the clock dial lines they will promptly discard the 0.5 in favor of the 0.25 in the uniform coloring of the lines.

Knowing by my every day experience, the value of the 0.25 cylinder lenses, also the great annoyance which this low degree of astigmatism produces under eye pressure, and being therefore constantly on the lookout for it, I can nearly formulate this proposition. Patients with $V. = \frac{2}{3}\%$, reading readily the finest print, with distant vision not much improved by + or — glasses, persons who cannot use their eyes for near work without pain, will be found on careful examination to have a low degree of astigmatism which a 0.25 cylinder will correct, to their very great comfort.

Often in testing these eyes which pain on use, they seem to possess perfect vision. In many the astigmatic dial will appear correct, all the lines seeming to be of uniform blackness. These are the patients to whom + spherical glasses are given by many ophthalmic surgeons, because the examination is deemed complete, and the low degree of astigmatism has not been detected. Put a 0.25 spherical lens before one eye, the other being closed, and the difference in the coloring of the lines will at once become prominent. *The latent, but painful astigmatism, becomes apparent.*

It is very important in the detection of these low degrees of astigmatism to close one eye. At times I find the error of refraction in one eye at right angles to the faulty meridian of the other. With both eyes open the clock dial lines are perfect, each eye seemingly correcting the fault of the other. Should the patient be examined with

the two eyes directed to the astigmatic lines the cause of painful vision would remain unnoticed. It is only when one eye is closed that the fault becomes recognizable.

Even with the one eye the sharpness of outlines of the radiating lines will vary. First one, then another, seems better outlined as the ciliary muscle modifies the crystalline lens surface in its attempt at overcoming the fault in the cornea. After staring at the dial for some little time the true meridian fixes the best lines. The faulty lines do not always come out in gray, contrasting with the sharply cut black ones. Sometimes they appear as bright blue or red, and startle the patient by the contrast.

In correcting these weak degrees of astigmatism I find the use of atropia very misleading. Hence, as a rule, I do not use it in determining the kind, and the direction of the faulty focusing in cases of $V. = \frac{2}{30}$, unless glasses prescribed without the use of atropia, do not give the desired or expected comfort. When I speak of atropia I mean homatropia, which I have exclusively used for many years for refractive work. With very few exceptions the mydriatic reverses the kind and the direction of the faulty meridian. An astigmatism of 0.25 — c. o. becomes under atropia 0.25 + c. 90. In the majority of patients the reversed lens + c. does not give the degree of comfort in its use that the — c. will, the one which corresponded with the normal condition of the eye, before the atropia was used. I find these low degrees of astigmatism, as modified by atropia, a fictitious condition which will most frequently mislead the surgeon who accepts it. Should there be any doubt in the mind of the patient as to the exact angle of the fault, then atropia lends a valuable aid in determining it.

As this, however, is not intended for a paper on astigmatism, an important error of refraction, but is designed to call attention to the necessity of correcting the minor degrees of irregular refraction in patients who have $V. = \frac{2}{30}$, a condition which many ophthalmic surgeons ignore, my object can be best illustrated by giving a synopsis of my individual office work for 1888. This list refers to private practice only, and does not include the many cases of astigmatism, worked out by my assistants at the Presbyterian Eye and Ear Charity Hospital where my dispensary work is done. In my office case-book for the year 1887, I have recorded the history of 493 persons for whom I have prescribed cylinder glasses. As in many of these persons each eye differed both as to the kind, the degree and the angle of the irregular refraction, I have thought it best in tabulating my astigmatic work, to refer to the 986 eyes rather than to the 493 persons. All of these patients sought advice for the relief of eyes which were painful on use. I used atropia on 135 of the 493 persons, in about 27 per cent. of the

cases. These were pay patients who expected relief. Had the glasses prescribed not given comfort, they would have returned for further treatment, and I would then have used atropia to sustain, correct, or to modify my first diagnosis. I must therefore believe that the majority of the glasses prescribed, without the use of homatropia instillations, were satisfactory. In a great many instances I have evidence of the entire comfort secured, and the perfect control regained over the eyes even months after the glasses 0.25. — c. were given.

NO.	ANGLE.	NO.	DEG.
267	— 0.25°.	546	0.25. D.
90	— 0.25 ⁹⁰ .	171	0.5. D.
79	— 0.25 oblique.	66	0.75. D.
29	+ 0.25°.	60	1. . D.
85	+ 0.25 ⁹⁰ .	35	1.25. D.
16	+ 0.25 oblique.	22	1.5. D.
63	— 0.5°.	10	1.75. D.
23	— 0.5 ⁹⁰ .	27	2. . D.
37	— 0.5 oblique.	8	2.25. D.
6	+ 0.5°.	11	2.5. D.
28	+ 0.5 ⁹⁰ .	5	2.75. D.
14	+ 0.5 oblique.	12	3. . D.
23	— 0.75°.	6	3.5. D.
9	— 0.75 ⁹⁰ .	2	4. . D.
15	— 0.75 oblique.	1	5. . D.
4	+ 0.75°.	1	5.5. D.
10	+ 0.75 ⁹⁰ .	3	6. . D.
7	+ 0.75 oblique.		
15	— 1.°.		
6	— 1. ⁹⁰ .		
15	— 1. oblique.		
1	+ 1.°.		
13	+ 1. ⁹⁰ .		
10	+ 1. oblique.		
9	— 1.25°.		
5	— 1.25 ⁹⁰ .		
12	— 1.25 oblique.		
0	+ 1.25°.		
5	+ 1.25 ⁹⁰ .		
4	+ 1.25 oblique.		

TABLE Showing the Direction of the Error of Refraction.

TABLE Showing the Degree of Astigmatism in 986 Eyes Prescribed for in the Office Practice of Dr. J. J. Chisolm, of Baltimore, Md., during the year 1887.

Of the 986 eyes, all of them more or less painful in use, so that relief was sought, 546 indicated an error of refraction which a 0.25 — cylinder corrected. Had I not sought for, and

found this small error, which in the relief given proved to be the cause of all discomfort, I would have turned away nearly two-thirds of my patients unrelieved. Some of these patients brought painful eyes and 0.5 cylinders prescribed by ophthalmic surgeons of deservedly high standing. The change from the 0.5 + or — cylinder lens which over corrected, to the 0.25 cylinder which made the lines on the dial uniform, removed at once the discomfort complained of. It enabled patients to read by the hour when with the stronger glasses they could not use their eyes at all. This magical and immediate change was brought about by no other treatment than the recognition of the low degree of astigmatism, and the substitution of 0.25 for 0.5 cylinder. In some cases of defective vision sight would be improved from $\frac{1}{30}$ to $\frac{1}{5}$ by these weak cylinders.

As I have been pursuing this line of investigation for several years, and have learned to suspect low degrees of astigmatism in eyes painful in use, which exhibited $V. = \frac{2}{30}$, in seeking for it I find it. I could readily, from my case-book, give the detailed account of hundreds of patients, who, from not being able to read for more than a few minutes without glasses, could by the aid of a 0.25 cylinder, read for many hours.

It is only necessary to call attention to the frequency, and to the annoyance of these small degrees of astigmatism to have others find them as frequently as I do. The more familiar one becomes with these minor defects the more readily are they detected. I am sure that every month's experience adds to my facility, and also to the number of cases seeking advice. For the year 1887, 546 painful eyes showing only 0.25 D. fault were prescribed for in my private practice, and were relieved.

Through this paper I desire to impress others with my conviction, that painful eyes with $V. = \frac{2}{30}$ very frequently means astigmatism. Also that experience will show, that the most useful cylinder for the correction of eye and head pains in this very large number of patients, is the 0.25 D. cylinder. From my standpoint it becomes the most valuable astigmatic lens of the Trial Case.

DR. H. CULBERTSON: As to the 0.25 diopter being the more useful of lenses in the correction of ametropia, I can verify Dr. Chisholm's position to the letter. Not infrequently I can double vision with a D. 0.25 + or negative. As to the correction of ametropia upon the apparent refraction of an eye, I would say that I have not infrequently been compelled to do this after having used mydriatics and when the latter denoted the employment of different glasses.

As to binocular astigmatism, I must assure the Section, and especially Dr. Savage, that my views are original on this subject, and that I had not seen his article on this theme until he kindly pre-

sented me with a copy since I read my paper before the session. The doctor and myself have both been engaged in investigating this form of ametropia for about the same length of time and independently and unknown to each other.

Being a devotee to truth and not wedded to any solution of the *modus operandi* of binocular astigmatism, or claiming in my paper more than a hypothesis as to the cause of this anomaly, I can only learn with pleasure of the views of Dr. Savage. In looking over his brochure on this subject hastily I understand that gentleman to hold that the entire phenomena of binocular astigmatism is due to anomalies of the four oblique muscles. If I am correct in this inference, I am compelled to differ on this point, believing that the state of the recti are concerned in this anomaly not infrequently, as well as the oblique. The five-minute rule will not permit me to enlarge upon my views on this point.

As to the relation of the ciliary muscle to this anomaly I cannot now state a positive opinion, for my investigations as yet do not permit me to say that it has not a positive or negative influence in the phenomena of binocular astigmatism. As for myself, future investigations must determine this point.

SOME OF THE INFLUENCES OF THE SYMPATHETIC NERVOUS SYSTEM IN DISEASE.

Read in the Section on Practice of Medicine at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY JOHN NORTH, A.M., M.D., PH.C., F.S.Sc., LOND.

PROFESSOR OF CHEMISTRY, TOXICOLOGY AND RHINO-LARYNGOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS, KEOKUK, IOWA.

My attention was drawn to the influences of the sympathetic nervous system, in diseases of mucous membrane, in connection with my studies in rhinology and laryngology. In a paper read before the fourth annual meeting of the American Rhinological Association, at St. Louis, in 1886, on "Naso-pharyngeal Catarrh, as a Cause of Neurasthenia," I attempted to show that functional derangement of the different portions of the body were effected through the great sympathetic nervous system. Also, in a paper read before the American Rhinological Association, at Washington, last September, on "The Pathology and Treatment of Naso-pharyngeal Catarrh," in which I attempted to demonstrate that the diseases of the nasal and pharyngeal mucous membrane, generally called naso-pharyngeal catarrh, was not an inflammation of the mucous membrane, but was a condition produced by paresis of the sympathetic ganglia and nerves supplying the mucous membrane and blood-vessels of these parts.

In the last mentioned paper I alluded to the

fact that if paresis of the cerebral and cervical ganglia and nerves of the sympathetic nervous system caused catarrhal and other troubles in the upper air passages, that it might be the means of explaining a great many pathological conditions in organs and portions of the body supplied by the sympathetic nervous system. It is for the purpose of calling attention to the pathological conditions of the sympathetic nervous system, or to the pathological conditions of the parts supplied by this system of nerves, that I present this paper. The term pathology is too frequently used where pathological anatomy should be used. In a large number of troubles produced by paresis of the sympathetic system, we are not able to detect anatomical lesions. Pathology bears the same relation to pathological anatomy that physiology does to histology.

I will not take up your time with the anatomy of this great nervous system, taking it for granted that every member of the American Medical Association is familiar with the anatomy and histology of both the cerebro-spinal and sympathetic nervous systems.

The anatomy, histology, physiology and pathology of the sympathetic nervous system is one of the most interesting and of the greatest importance to every medical man. Yet it is a subject that is very much neglected in our medical colleges and by medical men after they enter practice.

This system of nerves is sometimes called the ganglionic nervous system, and the nervous system of organic, or vegetable life. By a more thorough knowledge of the sympathetic system we might be better able to understand what appears to be some of the mysterious phenomena of disease.

Commencing as it does within the cranium by the ophthalmic ganglia, with its double chain extending down on either side of the spinal column, terminating below in front of the coccyx in a single ganglion—the coccygeal ganglion.

In the cranium we have four ganglia, called the cerebral ganglia, the ophthalmic, the sphenopalatine, the otic, and the sub-maxillary. In the neck there are three cervical ganglia; the superior, middle, and the inferior. In the chest are situated the twelve thoracic ganglia, corresponding to the twelve ribs. In the abdomen we find the great semilunar ganglia, sometimes called the abdominal brain, with its large plexus of nerves, called the coeliac plexus. In the lumbar region, in front of the spinal column, are the four or five lumbar ganglia. In the pelvis we have the four or five sacral or pelvic ganglia, and terminating below and in front of the coccyx, is a small single ganglion, the last of the double chain called coccygeal ganglion, or ganglion impar. Thus the sympathetic nervous system, or cord, as it is sometimes called, consists of from twenty-eight to

thirty ganglia on either side of the spinal column, terminating below in a single ganglion. Each ganglion is connected by nerves with the other ganglion of the same portion, each group of ganglia being connected with the group directly above or below. Each ganglion is also connected with the cerebro-spinal nervous system, receiving filaments from the cerebro-spinal afferent nerves and giving off nerves to the cerebro-spinal efferent nerves in addition to the filaments it gives off to the organ or tissue it supplies.

The question has frequently been asked as to the dependence of the cerebro-spinal and sympathetic nervous system upon each other. In a course of lectures recently delivered by Dr. Gaskell, before the Royal Institute of London, he claims that no new nerve fibres arise in the sympathetic ganglia, but that the fibres destined to them from the cord comes from the inner portion of the posterior horns and inner portion of the gray matter. They are medullated, but in passing through the ganglia they lose their medullary sheath and divide into smaller strands. The old distinction between the two nervous systems, that the cerebro-spinal needs repose, whilst the sympathetic does not, since it cannot be proved, and indeed, is highly improbable that the activity of the brain and spinal cord is ever completely in abeyance. Dr. E. Long-Fox, in his excellent work on the sympathetic nervous system, gives a number of instances of the natural dependence of the two systems. He says, "The fact, that in spite of this natural dependence the sympathetic, under conditions of lesions of brain or cord, is enabled within certain limits to act independently." Parks states that nutrition is probably carried on with complete destruction of the cerebro-spinal centres.

Fox states that "reflex irritation of the vasomotor nerves can be entirely limited to the particular organ or tissue supplied." Thus in Vulpian's experiment, some days after the transverse section of the sciatic nerve, or of the brachial plexus, when the corresponding pulp of the paws of the animals had become quite pale and anæmic, he was able by slight rubbing of these pulps to cause a reflex congestion. The fact of the continuance of the heart's action for a time in some mammals after its separation from the body, in the frog, after the destruction of the brain and medulla oblongata, irritation will cause congestion of the limbs. In mammals, after section of the cord at the mid-dorsal region, sensory excitation of one posterior limb will cause reflex heart phenomena in the other.

While the sympathetic ganglia may not, and probably do not, have the power of generating nerve force independently of the cerebro-spinal system for any great length of time they do seem to act as storage batteries and accumulate nerve force generated by the cerebro-spinal system.

This accumulated force is capable of carrying on the life process after the cerebro-spinal system ceases to act. But this action can only be kept up for a limited time unless reinforcement is received from the cerebro-spinal. This reinforcement is received through the afferent filaments going to each ganglion. If a lesion of the cerebro-spinal system takes place in the region of these afferent nerves, or the afferent nerve is severed, the ganglion will only retain its power for a limited time and the same result will take place that is found after the lesion of the ganglia or its nerves.

Fox says, "Lesions of the cervical cord may cause the same oculo-pupillary phenomena as lesions of the superior cervical ganglion." Lesions of the cervical cord (seventh cervical and first dorsal) may cause the same vaso-motor paralysis evidenced by unilateral vascular dilatation of the face, ear, and head, as is seen in lesions of the cervical sympathetic ganglion.

Hemisection of the lower third of the dorsal region of the cord produces vascular dilatation in the lower limit of the corresponding side, and so increase of temperature.

All lesions of the spinal cord, and pressure on it, may enfeeble the vascular tone of the parts in relation by their vaso-motor nerves with the region of the cord below the lesion. The general distribution of the sympathetic nerves is to the mucous membrane, and possibly to integument, to non-striated muscular fibres to the heart, and particularly to the muscular coats of the arteries. The parts principally supplied with sympathetic nerves are usually capable of none but involuntary movements, and when the mind acts on them at all it is only through the strong excitement or depressing influence of some passion, or through some voluntary movement with which the action of the involuntary part are commonly associated. In the volume on the nervous system in "Flint's Physiology of Man," we find a long list of experiments made upon the sympathetic system, for which I am much indebted, as I make use of a number of them.

In 1727 Petit made some experiments upon the cervical portion of the great sympathetic nervous system. His experiments only showed its influence upon the eye, also, that the influence of the sympathetic nerves was propagated from below upwards towards the head, and not from the brain downward, as in the cerebro-spinal system.

In 1816 Depuy removed the superior cervical ganglia in horses with effect of producing infection of the conjunctiva, increase of temperature in the ear, and abundant secretion of sweat upon one side of the head and neck. In one experiment upon the removal of the ganglia on both sides, in a horse already feeble and emaciated, the face and ears became hot and moist. He says that "the consequences of destruction of the ganglia are, contraction of the pupils, redness of the conjunc-

tiva, general emaciation, as well as œdema of the extremities, and a general cutaneous eruption. These experiments show that the sympathetic has an important influence on the circulation, nutrition, calorification and secretion.

In 1851 Bernard repeated the experiments of Petit, dividing the sympathetic in the neck on one side, in rabbits, and noted on the corresponding side of the head and ear increased vascularity and an elevation in temperature amounting to from 70° to 110° F. This condition of increased heat and vascularity continued for several months after division of the nerve. In 1852 Brown-Séquard repeated these experiments and attributed the elevation of temperature directly to an increase in the supply of blood to the parts affected. He made a most important advance in the history of the sympathetic, by demonstrating that its section paralyzed the muscular walls of the arteries, and further, that galvanization of the nerve in the neck caused the vessels to contract. This was the discovery of the vaso-motor nerves.

The experiments of Petit, Bernard, and of Brown-Séquard, were of great value, as they demonstrated that the sympathetic influences the general process of nutrition, and that many of its filaments are distributed to the muscular coat of the blood-vessels. Flint says, "when the sympathetic is divided in the neck the local increase in temperature is always attended with a very great increase in the supply of blood to the side of the head corresponding to the section. The increased temperature is due to a local exaggeration of the nutritive processes apparently dependent directly upon the hyperæmia. There are numerous instances in pathology of local increase in temperature attending increased supply of blood to restricted parts."

If the sympathetic is divided in the neck of a rabbit and both ears are cut off just above the head with a sharp knife the artery on the side on which the sympathetic has been divided will frequently send up a jet of blood to the height of several feet, while on the sound side the jet is always much less forcible, and may not be observed at all.

Analogous phenomena have been observed by section of the sympathetic in other parts of the body. Samuel has noticed an intense hyperæmia of the mucous membrane of the stomach and intestines following extirpation of the cœliac-plexus. By comparative experiments it was shown that this did not result from the peritonitis produced by the operation.

When the sympathetic filaments distributed to a gland are divided the supply of blood is very much increased, and an abundant flow of the secretion follows. Dr. Moreau has made a series of observations on the influences of the sympathetic nerves upon secretion of liquid by the intestinal canal, which are particularly interesting in their

bearing upon the sudden occurrence of watery diarrhœa. In these experiments the abdomen was opened in a fasting animal and three loops of intestines, each from four to eight inches long, were isolated by two ligatures. All the nerves going to the middle loop were divided, care being taken not to sever the blood-vessels. The intestines were then replaced and the wound in the abdomen was closed with sutures. The next day the animal was killed. The two loops with the nerves intact were found empty, as is normal in fasting animals, and the mucous membrane was dry, but the loop with the nerves divided was found filled with a clear, alkaline liquid, colorless, or slightly opaline, which precipitated a few floculi of organic matter on boiling. I will not enter into the details of the function of the sympathetic nervous system. It is well established that it regulates the blood supply, the temperature, the nutrition and secretion. And in the experiments mentioned it has been seen that the destruction or removal of any ganglia, or section of the sympathetic nerves supplying a certain part or organ of the body, alters the circulation, temperature, nutrition, or secretion, or all these, in the part of the body or organ which receives nervous supply from that portion of the sympathetic nervous system. It is thought that the sympathetic has the power both of conducting, transferring, reflecting, and possibly of augmenting or of inhibiting impressions made on it. Near the terminal filaments of the sympathetic nerves there exists numerous ganglionic cells.

The marvelous effects of reflex action in health and disease, in connection with the sympathetic nervous system, is well recognized by every medical man. For coarse stimuli the spinal cord and medulla oblongata are the chief centres for vasomotor reflex action. But the heart is more or less independent of these great nerve centres. A reflex arc exists in its own substance. Reflex movements are excited from all sensory nerves, not only spinal, but also sympathetic. Claude Bernard has shown that reflex action can occur in the sub-maxillary gland when all nerves that communicate with the cerebro-spinal centre are cut. If the superior cervical ganglia are separated from the higher nervous centres oculo-pupillary phenomena can be reflexly excited. That the uterine centres can act independently is seen in the occasional expulsion of the child after the death of the mother. The expulsion of *fæces per anum* after the death of the patient shows also that the sympathetic ganglia of the intestines are centres for independent reflex acts.

In a paper read by Dr. Woakes before the International Medical Congress, at London, he speaks of the sympathetic ganglia as reflex centres. Drs. Fox and Woakes give a number of examples to show the reflex power residing within the sympathetic system.

It is not my object in this paper to call attention to the reflex phenomena of the sympathetic system, but apply the physiological facts we have mentioned to the influence of this system of nerves upon the circulation of the blood and the condition of the blood-vessels, more particularly to that condition called catarrh, or inflammation of mucous membrane, and to the deranged function of certain organs dependent upon disturbance of local circulation. It is impossible to give a definition of inflammation that will be brief and exact at the same time. Inflammation is a term implying a whole series of processes, partly vascular, and partly textural, and their processes admit of great varieties of combinations. We have certain characteristics of inflammation but the whole content of the term cannot be fully indicated without describing briefly the process to which the term is applied. Four cardinal symptoms of inflammation are well recognized, namely: *redness, swelling, pain and heat*, with impaired function. The *redness* is from increased afflux of blood to the part. The *swelling* to an increased volume of blood in the part, and from exudation. The *pain* is caused by the swollen condition of the parts, which cause pressure upon the sensory nerve filament, or by chemical irritation. The *heat* comes from the excessive flow of blood through the part in the stage of hyperæmia.

In inflammation we have both vascular and textural changes. The first vascular change is produced by some *irritant* which being applied there is a general dilatation of the vessels, first of the arteries, then of the capillaries and veins. The flow of blood through the widened channels is more rapid at first. This is the stage of hyperæmia. After a time the speed diminishes, and at length the flow becomes slower than in the normal condition. This constitutes the stage of congestion. During this stage we have a migration of the blood corpuscles through the walls of the veins and capillaries into the surrounding tissue, but not from the arteries associated with the passage of the corpuscles. There is always an escape of liquid, which is comparatively rich in albumen. This is the stage of exudation, or infiltration.

All these changes and stages depend upon a molecular alteration in the walls of the blood-vessels. Mere paralytic dilation does not give rise to slowing of the current or to the passage of the blood corpuscles through the walls of the vessels. The inflammatory changes in the blood-vessels must of necessity be associated with tissue changes. These changes vary with the nature of the exciting cause, and with the intensity of the inflammation, with the character and extent of the vascular disturbance, and with the nature of the tissue. Inflammation cannot exist without molecular death.

Is it possible to have these cardinal symptoms of inflammation, *redness, swelling, pain and heat*,

with impaired function dependent upon paresis, or paralysis of the sympathetic nervous system, without inflammation, without structural change in the blood-vessels, without molecular death? This question opens up the question of contractions, dilatation, erectility and reflex vaso-motor effects. The function of the vaso-motor nerves most frequently called into exercise is contraction.

Fox says, "The motor nerves that preside over the muscular contraction of vessels, and rule the local circulation, are the nerves that issue mainly from the ganglia of the great sympathetic, creep along the arterial walls, and can be followed into the middle muscular coat of the arteries. The vaso-motor apparatus therefore is in a state of permanent activity, never in repose, never inert. The muscular tunic of the vessels is in a state of semi-contraction—in other words, of vascular tone. Variation in this tone will be the necessary consequence of various modifications of the nervous apparatus."

The vaso-dilators are also in a constant state of action but are fewer in number than the contractors. Were it not for the pressure and action of the vaso-dilators, the vaso-contractors would cause undue and complete contraction of the vessels. The arteries possess both elasticity and contractility; the small arterialis contractility only. The vaso-contractors and dilators acting together keep up the proper calibre of the vessels.

When from the presence of some irritant upon the vaso-motor nerves, or as the result of mental impressions, etc., by reflex action, the vaso-motor nerves become affected, lose their tone, the ganglia soon loses its power, paresis, or partial loss of power takes place, the vessels dilate and remain dilated. As the result of this ganglionic paresis, we have *redness* from the increased afflux of blood to the part, we have *swelling* from increased amount of blood in the part, and after some time from the excessive nutrition furnished the tissue, the *pain* being produced by the pressure upon the sensory nerves, the *heat* from the rapid and excessive flow of blood through the part, we do not have changes taking place in the vascular walls. In the experiments made by Petit, Bernard, Brown-Séquard, and others, to which allusion has been made in this paper, it was shown that by removal of the ganglia, or section of its nerve filaments, that the part of the body supplied from that ganglion had an increased flow of blood into and through the part. That there was considerable increase of temperature, *redness* and *swelling* of the part, and, no doubt, *pain*. That there was increased secretion and nutrition.

In conclusion. When we take into consideration the anatomy and distribution of the sympathetic nervous system, together with its physiological functions, and its pathological action under artificial impairment, is it not reasonable to sup-

pose that if a ganglion becomes impaired and loses its power that we might have such conditions taking place that would explain a number of the phenomena occurring in diseases of organs or other parts of the body supplied by the great sympathetic nervous system?

Would it not explain many of the functional brain troubles? of eye, ear and nose, pharyngeal and laryngeal troubles. Pneumonia can be more easily explained in this way than in any other. Some heart, stomach, and kidney troubles can be explained by sympathetic paresis. Gynecological troubles lose half their terror when viewed from this light.

We all are aware that in the cases of troubles mentioned recovery is more rapid and complete when treatment is directed to the sympathetic nervous system.

A PLEA FOR THE BETTER RECOGNITION OF THE OCULIST IN THE SERVICE OF THE U. S. PENSION DEPARTMENT.

Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Ninth Annual Meeting of the American Medical Association, May, 1888.

BY JOHN W. WRIGHT, M.D.,
OF COLUMBUS, OHIO.

The U. S. Pension Department has been established for the purpose of remunerating those who have become disabled while in the service of their country by reason of injury, sickness or deprivation.

While the Government is endeavoring to provide for these persons, it becomes necessary to guard against impostors, for the recompense is amply adequate to induce those who are so disposed to make the effort to obtain it. For this reason boards of examining surgeons and special agencies have been established throughout the country, as well to enable the deserving to procure what is justly due them as to prevent others from obtaining that which does not belong to them.

At present the applications for this beneficence are in great profusion, for the reason, perhaps, that many of the older ones who served in the late civil war mistake their physical impairments from age for disabilities from wounds and exposures from army life; while others who received injuries while in service or suffered from the sicknesses and privations consequent to a camp life, although not considered at the onset sufficiently disabled for a pension, have developed with increasing years diseases and infirmities which have rendered them confirmed invalids.

It is doubtless the design of the Government authorities that the machinery of the Pension Bureau shall be as complete as possible; for the nearer it approaches perfection the more will the

chances for fraud be diminished, hence every application receives the most careful and deliberate consideration at the hands of this department.

The Medical Referee, in his instructions to examining surgeons, states that (Art. 5) "the object of a medical examination is to obtain a full and complete description of the disabilities for which pensions are claimed, and to gain a *clear and distinct idea of the extent to which they disable in the performance of manual labor.*" (Art. 6.) "To this end it is necessary that *every disability existing shall be fully described,*" etc.

Under the heading of "*Diseases of the Eyes,*" (Art. 58) we find: "In all diseases of the eyes involving internal structures the ophthalmoscope must be brought into use, otherwise the examination is of little value."

In closing the instructions the medical examiners are reminded "that the interests involved in pensions are of such magnitude as to demand the employment of the very best skill this country can supply." The term "a full and complete description of the disabilities" is sufficiently significant to indicate the desire of the head of the medical department.

That "the ophthalmoscope must be brought into use, otherwise the examination is of little importance," is pertinent; but could the department have fully comprehended the necessary knowledge of optical principles and the constant and unremitting practice which underlie a correct application of this instrument, in order to be able to detect the various pathological conditions in eye affections, I do not believe this last clause of instructions would have been imposed upon medical gentlemen of whom not one in every hundred can realize the practical value of this instrument. This may seem to many an exaggeration, yet I believe every oculist here will bear me out in this assertion. Nor is this intended to reflect upon the abilities of examining surgeons—for there is not an instrument of diagnosis of such incalculable value, in my estimation, so difficult of application as the ophthalmoscope.

In making this entreaty, a few cases which have come under my immediate observation may be in place.

A gentleman living in the eastern part of Ohio, who served his country during the War, made an application for a pension because of a disease of the eyes which rendered him almost blind and incapable of earning a livelihood.

He was ordered before a board of examiners, and in due time he received a pension and considerable back pay. Some time afterward he was induced by his friends to consult me in reference to his eyes. I found that he had entropium, which had followed what he termed the "army sore eyes." There was no complication or structural disorganization of the parts, the inflammation being simply mechanical, the result of the hairs

which were constantly rubbing against the balls.

I informed him what could probably be done and, seeing an opportunity of giving him great relief, I encouraged him with the possibility of considerable improvement in his vision. I saw that he was not favorably impressed with my opinion, and I naturally presumed that he did not have the confidence in my ability to accomplish that which I had given him encouragement could likely be done. I afterward learned that he had *too much* confidence in my ability to help him. He feared that the operation would prove so successful that he would be compelled to relinquish his pension. Afterward, upon making inquiry, I was surprised to learn that he had obtained his pension because of "glaucoma."

Mr. B. had served considerable time in the army. Four years ago I operated upon one of his eyes for cataract, he being blind in both eyes. The operation proved very successful and the patient returned to his former occupation—that of a contractor—which he had been compelled to relinquish almost a year before the operation, and which he now manages with very little inconvenience.

Not long since he got into the hands of a pension solicitor and was easily made to believe that his blindness had been the result of sickness and exposure while he was in the service. He "*did* remember of having had the jaundice while in camp," and how "*yellow*" his eyes looked. "This was doubtless the key to his blindness."

An application for a pension was at once made, and in due course of time he was ordered to appear before the board of examining surgeons. One of the examiners who makes some pretensions to a knowledge of eye diseases and the use of the ophthalmoscope was delegated to examine all such applicants, and accordingly examined this gentleman's eyes.

An elaborate examination was at once commenced, and the ophthalmoscope was brought into vigorous use. An hour at least was consumed in the examination. Of course the opaque lens was seen in the eye which had not been operated upon, or I presume it was, as the ophthalmoscope was made to play upon it at least one-half of the time; and in the other eye the cicatrix where the incision had been made in the upper part of the cornea, and the irregular-shaped pupil, were plainly discernible, and excited the interest of the surgeon.

The surgeon inquired what had happened to the eye. Evasively he was answered that "some doctor had been trying to operate upon it." The examining surgeon then ventured the remark that it had been "*badly butchered,*" and advised him not to allow the other eye to be "meddled with," or he would be left "*entirely blind.*" The applicant has received, I understand, a comfortable pension.

Of course it is impossible for us to say that the applicant's jaundice, together with his other sicknesses and exposures in the service, *did not* cause or contribute in some way to the opaque condition of his lenses, although his mother and a sister, who were not exposed to these influences, were both blind from cataract.

Although the origin of a disability is considered a legal matter; that is, a thing to be determined by evidence obtained outside of the medical examination, yet the examining boards are largely entrusted with the duty of distinguishing and separating disabilities of origin either before or after enlistment from those which occurred during the actual service.

In the above case the opinion of any reputable oculist, doubtless, would have precluded a pension.

A gentleman from the southern part of Ohio came to my office a few years ago and desired me to make an examination of his eyes and give him a written opinion. He made the statement that while in the army he had had sunstroke, and with it the loss of an eye. He was discharged and sent home, not on account of the loss of the eye, but because of his general physical disability which followed the sunstroke.

A few months after returning home, while engaged in some work requiring physical exertion, he suddenly lost his sight in the other eye. He was now practically blind, although not *entirely* so, for he could grope his way around to a better advantage than if he had been totally blind, but he was so blind that it was impossible for him to distinguish one object from another, or to be able to perform any labor that could not have been accomplished by a blind man. He had made several attempts to procure a pension, and had been ordered before different examining boards; but for some unaccountable reason to him he had never been able to obtain it. Finally it came to his ears that it was intimated by some persons that he was a malingerer, and it was to contradict this report and to place himself in a proper standing among his friends, rather than an aid in procuring the pension, that he desired the examination and a written statement concerning the condition of his eyes.

The examination with the ophthalmoscope revealed the fact that there had undoubtedly been very extensive retinal hæmorrhages involving the maculæ in both eyes. The hæmorrhagic spots had been unquestionably very numerous, as there were many places marked by choroidal alteration or replaced with blackish pigment. In other places the retinal tissue seemed to be degenerated and marked by a whitish or grayish tinge. There was such complete destruction of the retinal tissue that it was impossible for him to more than know that an object was in front of him in good light. I gave him a certificate stating the facts, since which time I have heard nothing from him.

I do not recollect of ever having seen or heard of retinal hæmorrhage caused from sunstroke, but, owing to the engorged condition of the sinuses and veins of the brain during the active stage of the affection, it is readily understood how it could occur.

The second hæmorrhagic attack can be explained because of the tendency of recurrences of cerebral engorgement after sunstroke, marked by sudden depressions upon exposure to heat or bodily exercise.

It is fair to presume that the surgeons who had examined him took into consideration the external appearances of his eyes, and had overlooked their retinal condition.

As oculists are generally aurists, the following case which refers to the hearing is permissible:

A young man enlisted at the beginning of the War and was in active service most all the time until its close. He was in many engagements where there was heavy cannonading. When he was discharged he was somewhat deaf, and grew gradually worse for ten years following, at which time it was almost impossible for him to understand the loudest talking. Since that time he has remained in this condition.

About eight years ago I saw him, when he was making an effort to obtain a pension. He came to me because I had known him before he entered the service, and also because, he said, he had consulted me in reference to his deafness immediately after his return from the army. I have, however, no record or remembrance of his consulting me at the time mentioned by him, but from an incident which he referred to as having occurred at the time, I presume he did. At any rate I was not able to testify, as he desired evidence to establish the time the deafness began and its continuance, in order to associate it with the exposure to the heavy cannonading during the service.

Having no record of the examination I made eight years ago, I am not prepared to give the details, yet I am confident I found no appreciable lesion, because of an opinion I formed of his case at the time, and which I have had in my mind ever since, relative to the cause of his deafness.

I came to the conclusion that there was an ankylosis of the joints of the bones of his ears. These bones, as we all know, are, or should be, freely movable at their joints, although delicately attached to each other. Their articulating surfaces are covered with cartilage and connected with capsular ligaments, and lined with synovial membrane, the same as the articulating surfaces of other bones, and are no doubt liable to the same diseases as the larger joints. These joints are so adapted as to allow of the motions of the bones conveyed to them through the membrana tympani from ordinary sounds, and they perform their functions perfectly well and without injury to themselves under these conditions. But heavy

cannonading would cause, through this membrane, excessive action of these joints. Then why is not a synovitis just as likely to be induced here as it would be in the larger joints, where it is so liable to end in an anchylosis?

But it matters not whether the deafness is caused from an anchylosis of the bones of the ear or, as some authors would have it, in case of boiler-makers and others subject to like noises, that it is due to nervous exhaustion from continued shock, or, as explained by others, from chronic catarrh of the middle ear; it is quite sufficient for us to know that cannonading has been the cause of very much and intense deafness.

In this case it is impossible, perhaps, to establish an unbroken chain of evidence from the time of the inception of the injury until very marked deafness ensued, from the very fact that slight deafness, or what is termed dullness of hearing, is not very noticeable except to one's most intimate friends or associates. When the patient is no longer able to distinguish ordinary sounds, then it is noticeable to all.

Evidence that this man was exposed to heavy cannonading during his service, and that the deafness now exists—in the absence of lesions that would indicate that the deafness was not the result of army exposure—would be sufficient grounds for allowing him a pension.

If, as expressed by the Medical Referee, "the interests involved in pensions are of such magnitude as to demand the employment of the very best skill the country can supply," then it is nothing but just that *all* applicants claiming defect in sight or hearing should be referred to boards of examiners composed solely of experts in this particular class of affections.

The number of applicants claiming defect in vision alone would justify this. From July, 1886, to December, 1887, there were 4,672 pensions granted for disabilities of the eyes. As about 12 per cent. of all applicants during this time received pensions, then there was the enormous number of 39,000 applications in this class alone.

In concluding this argument I disclaim any selfish motives more than a desire that our profession may be the means of promoting the interests of many worthy applicants, and of increasing the efficiency of the Pension Department by contributing the very best skill for the examination of this particular class of applicants.

OXYPIPERIDIN, a substance derived from the distillation of benzolamidovalerianic acid, is very similar to strychnine in its action, being a strong tetanizer. The crystals of oxypiperidin melt at 30°–40° C. They are soluble in water, alcohol, ether and dilute acids. When oxypiperidin is boiled with strong acids the non-toxic substance α -amidovalerianic acid is formed.

A CASE OF PLACENTA PRÆVIA.

*Read before the Medical Society of the District of Columbia,
April 25, 1888.*

BY PHILIP MARVEL, M.D.,

OF WASHINGTON, D. C.

The subject of this report, Mrs. S., was a colored woman *æt.* 38, of medium height, small in stature, much reduced and emaciated by phthisis pulmonalis; married, one child 13 years old; no miscarriages, and had been in expectancy for some seven months when seen first by me.

According to her own statement, she had been ill of phthisis about two years, the physical signs of which were quite advanced. Through the kindness of Dr. Muncaster, who was attending her at the time for a slight uterine hæmorrhage, I was asked to take charge of her case. A second hæmorrhage occurred some three weeks later, though of little consequence so far as related to the quantity of blood lost.

My suspicion at once was that I had to deal with a case of placenta prævia, though an examination added little to strengthen or verify such a suspicion. The mouth of the womb was well closed, and quite impossible for me to insinuate my finger sufficiently far, within the cervix, to ascertain a placental offering without forcing dilatation, the expediency of which I shall have more to say further on. Principally rest, with little medication, was quite sufficient to check the flow, and my attention was then directed to the upbuilding of her general condition. Nutritious foods, good air, bromine and dilute phosphoric acid constituted the principal means employed. These were apparently effecting the results I had desired, and while waiting an opportune time to induce labor, I was called to see her with another hæmorrhage. Though not profuse, it was alarming, owing to the prostration it occasioned. For some time after my arrival, the hæmorrhage having been checked, she was unable to converse, and only slowly rallied under careful administration of stimulants and artificial heat. At this time there was no longer a question as to the condition, but a grave one, as to the most expedient procedure. To attempt a speedy delivery would be to employ means positively dangerous, and possibly to destroy the little chance that remained for her recovery. I packed the vagina, having previously inserted within the cervical canal a pledget of cotton, and gave my attention to the effort to restore her from the effect of the shock—the result of which was so transitory and unsatisfactory, that it was evident neither a conservative nor radical course of procedure was without danger.

Dr. Reyburn was now asked to see her with me, and found her substantially as above described. I attempted forcible dilatation with the fingers, but found her strength insufficient to bear it, and again we resorted to the tampon and waited dilatation, watching her all the time, and employing such

measures as the case and circumstances would allow. After six hours of watching and waiting, the cervix having in the meantime dilated, we administered chloroform and turned. The feet were brought down, and in ordinary cases, we would have waited for uterine pain and contractions, but in hers, there having been an absolute absence of both from the first, and ergot was without effect in producing them, we considered it hazardous to longer wait, hence proceeded to deliver by accoucheur force. The child being large in proportion to the woman's pelvis, in the absence of maternal aid we found it difficult and slow to relieve her; however, after some time and effort we succeeded in delivering her of a still-born child. The afterbirth soon followed. Uterine contraction was prompt and firm, and no hæmorrhage followed.

Mrs. S. rallied sufficiently to recognize and speak with her husband, nurse, and a friend who stood by her bedside, but shortly began to sink, and thus continued an uninterrupted failure for about three-quarters of an hour, when she expired. All means at hand, such as hypodermics of whisky, atropine, strychnia and aq. ammonia, together with artificial heat, were of no avail.

It may occur to some of you that it might have been wisest, as well as in keeping with a great deal of teaching upon this subject, for me to have induced labor when first I saw her with second hæmorrhage. There are conditions, individual and circumstantial, which should modify our plans and methods of treatment, irrespective, I think, of the fact that some writers have said, in every case of pregnancy when hæmorrhage occurs after the sixth month, premature labor should be induced. While, doubtless, this may serve the end well in many cases, I am strongly inclined to look upon this latter statement as dangerous teaching. Since it is impossible for one to formulate a rule, or set of principles, which will cover all conceivable conditions, it seems both unwise and unwarrantable to ask one to follow absolutely teachings which admit of no qualification. It would seem to conserve the proper end of treatment in any case to use at all times, and under all circumstances, the means which offer the greatest security to life, with the least possible danger. This principle I endeavored to apply to the case before you. When called to see her there was much more to be considered than the question of delivery. This was of little moment compared with the probable results of interference. It was evident to me that she was in no condition to stand the shock which induced labor would in her case occasion, hence the reason why I adopted a conservative procedure, when to prolong gestation was to prolong a threatening danger. The necessity for rapid delivery when induced in this case is, I think, apparent to all, and need not be further referred to. I submit the report to you, and will receive kindly any just criticisms you may have to make.

HYDATIDIFORM MOLE.

*Read before the Medical Society of the District of Columbia,
April 25, 1888.*

BY J. H. MUNDELL, M.D.,
OF WASHINGTON, D. C.

I was called about 11 A.M. on the 12th of April, 1888, to see Mrs. L. T., 19 years of age. Upon reaching the patient's house I was told that she had menstruated last about the 15th day of January. About the first of March she began to suffer with nausea and vomiting. After March 16 the nausea and vomiting became more distressing, accompanied by frequent slight hæmorrhages. A physician was called in, who visited her several times in the next two or three weeks. His remedies failed to give her the slightest relief, and not having made a diagnosis in the case satisfactory either to himself, the patient or her family, he was requested to discontinue his visits. I found her suffering with acute labor pains and flooding very profusely. Upon placing my hand upon her abdomen I found the uterus reaching to the umbilicus, quite hard and of symmetrical shape. A vaginal examination revealed the os uteri dilated just about large enough to admit the introduction of an ordinary sized goose-quill.

Her pulse was very feeble and rapid; indeed, she was almost in a state of syncope. Seeing that miscarriage was inevitable, I immediately proceeded to tampon the vagina carefully and thoroughly, which had the effect of arresting the hæmorrhage for a time. I returned again in about an hour and found that the blood had penetrated the tampon, and a slight hæmorrhage still kept up. I then packed tightly the vagina with as much cotton as I could introduce, and confined it with a T bandage. This had the desired effect of stopping the flow. I had before ordered her to be perfectly still, with her head low, and to eat freely of crushed ice. I visited her again at 6 P.M. and found no hæmorrhage. Upon removing the tampon I found in the vagina, and partially protruding from the os, a large mass of hydatidiform bodies.

By introducing my finger into the womb I scooped out all of the mass I could reach, in quantity about a quart (which I here exhibit, except a portion which was lost by adhering to the bed clothes).

The patient then seemed so very weak and the uterus so extremely sensitive and tender, I desisted from making any further exploration, believing, also, that I had secured about all of its contents. After giving ergot as a precautionary measure, and enjoining perfect quiet and recumbency, I left her for the night. The next day I found she had passed a rather sleepless night: her pulse was 120 and very weak, and her temperature 101°. I ordered warm carbolized vaginal injections, and full doses of quinine with

opium, to procure sleep. She was given also milk, beef-tea and milk punch. On the third day her temperature was 99° and pulse about 112. From that time to the present she has steadily improved, and is now able to sit up, although still very pale and anæmic; has a good appetite, and is taking quinine and iron.

Another form of hydatidiform pregnancy is what is called the fleshy mole, also called the true mole in contradistinction from the false mole, which occurs without impregnation.

About twelve years ago Mrs. T., then about 30 years of age, came to consult me at my office. She was looking very pale and anæmic. She complained of great debility, loss of appetite, and inability to make any exertion or attend to her household duties. She further stated that she had not menstruated for five months. I examined her uterus, but could find no appreciable change or enlargement to indicate pregnancy. Her lungs showed no evidence of phthisis. I put her upon the use of iron, quinine and strychnia, with as much nourishing food as she could take. She improved rapidly. After visiting me at my office several times, each time expressing herself as feeling much better and gaining strength, she changed her place of residence and stopped coming. I thus lost sight of her for about five months, when one afternoon I received a summons to come to her immediately, as she was very ill. When I got there she stated that shortly before sending for me she had been seized suddenly with violent pains in her back and lower portion of her abdomen, accompanied with some discharge of blood, which alarmed her very much, but that soon after dispatching her messenger she was relieved, after passing something hard and solid through the vagina, which, upon inspection, proved to be a fleshy mole of the shape but rather larger in size than a hen's egg. She then informed me for the first time that some three years previous, whilst under the care of the late Dr. Benjamin Thompson, of this city, she had passed a similar lump of flesh.

In this instance she had not menstruated for about nine months, four months before she first came to my office, and five from that time to the day when I visited her at her house.

Our much respected President, Dr. Thomas C. Smith, on the 23d of September last reported to this Society two cases of hydatidiform moles similar to mine, and at the same time so thoroughly discussed in his paper all of the literature relating to the causes and formation of these productions, that I deem it unnecessary for me to occupy the time of the Society by saying anything more on this subject.

THE AMBULANCE TENTS AND WAGONS of Captain Tompkins received the diploma of honor at the Brussels Exhibition.

REPAIR OF A RUPTURED CHORION. REPORT OF A CASE.

BY W. L. SCHENCK, M.D.,
OF OSAGE CITY, KAN.

On the first day of June, 1888, I was called to see Mrs. James L., living six miles south of the city. She had been thrown from a heavy farm wagon which, turning over, struck her across the lower portion of the abdomen and hips with such force that she was unable to move her body or lower limbs for several weeks. She was seven months advanced in her sixth pregnancy. Active uterine pains came upon the second day after the injury, the membranes rupturing on the third with a free discharge of liquor amnii. Despite hypodermic injections of sulph. morph. and atropia, rectal enemata of tinct. opii, etc., the os dilated and the pains and discharge continued for three days, the pains steadily growing less forcible and the waters less abundant, when both ceased and there was gradual improvement in the general condition, but any attempt to walk was accompanied by a free movement of the pubic bones at their symphysis and severe pain in the right side and hip, and she maintained an almost immovable decubitus.

On the 4th of August, at the end of her 280 days, I was again summoned to the patient's bedside. The labor progressed rapidly, the membranes rupturing early, and on reaching the house a healthy boy of 9 pounds awaited my arrival. I removed the secundines, which were buttonholed in the vagina, and carefully examined them. The rent in the chorion through which the child had escaped was near its centre. About midway between this and its attachment to the placenta there was a triangular fold in the membrane (which is very prettily preserved in alcohol), that had united by adhesive inflammation. The chorion was separated from the amnion throughout one-fourth its extent, the inner membrane being thickened and presenting on its outer surface—in the vitriform body—an ecchymosed appearance, the spots of blood varying in size from a pin-point to $\frac{1}{8}$ inch in diameter, and being covered with a delicate film of membrane.

Though this case is unique, not having found in my reading a similar one, its possibilities are readily appreciated. There was a rent—solution of continuity—in a serous membrane, which was folded together and held by the parts adjoining so as to close the opening; there was consequent irritation and exudation, and a forced rest that permitted adhesive inflammation—a result that might more frequently obtain after such accidents if we could secure perfect immobility of the parts.

The injury to the mother in this case secured a fixed decubitus. The lesson to be learned from it is a more positive insistence upon perfect rest. We know not in what case we may have a fortunate folding and pressure of the membranes which, if

maintained, may be followed by adhesion and a successful termination of the pregnancy. Not only must *absolute* rest be enforced until there has been sufficient time for union by adhesive inflammation, but a reasonable quiet must be maintained until after delivery.

MEDICAL PROGRESS.

REGULATION OF FLUID INGESTA IN CARDIAC FAILURE.—In a paper on this subject DR. J. BARR says:

Some time ago I had a patient who suffered occasionally from irritation of the urinary passages, with excessive excretions at times of uric acid, and at others of earthy phosphates. It was a case where the use of mineral waters might seem to have been indicated, but, as he had a feeble circulation, I cautioned him, before his visits in two successive years to two celebrated mineral water resorts, to be satisfied with the pure air and healthful exercise to be obtained in those elevated regions, without trying their supposed marvellous springs. On both occasions he was induced to consult a leading physician in each place, who understood all about the wonderful virtues of the waters, with the inevitable result that the waters were freely prescribed. On each occasion the patient returned much worse than when he left, and was afterwards quickly cured by a quinine tonic, and increased oxidation by healthful exercise in a place where there was no mineral spring.

I have, at present, under my care in the Northern Hospital, a patient who was admitted some weeks ago suffering from great mitral constriction, free tricuspid, regurgitation with evidence of commencing stenosis, great enlargement and hardness of the liver from chronic congestion, large ascitic effusion, general venous turgescence, and urgent dyspnoea. On a dry diet the patient has markedly improved; there is no dyspnoea, the venous turgescence has disappeared, the ascites has lessened, and she is now able to move about the ward, and has the prospect of returning home fit for light household duties. This woman has been several times in another institution, where she was kept on a liquid diet, and as she thought that an excessively morbid interest was taken in her case, on each occasion when she considered that she was near her latter end, she fled home to save a post-mortem examination.

Every drop of liquid which is placed in the stomach, with the exception of part of that which passes away in the faeces, must pass through the right side of the heart, and all of this, except that which is exhaled by the lungs, must pass through the left side before it can be excreted. When, therefore, there is any mechanical obstruction to the passage of the blood through the

heart, or, when the effective force of the heart is diminished, any increase in the amount of fluid in circulation must severely handicap the central pump. The velocity of the blood depends on the effective force of the cardiac contractions, and on the mass to be moved, and is inversely as the sectional areas. It therefore follows that when you have got a weak heart and a great amount of blood in the vessels, the circulation becomes very languid, and in a given time comparatively little is presented to the excretory organs. By the use of cardiac tonics to improve the force of the heart's beat, and by reducing the supply of fluid, thus lessening the bulk of blood, we lessen the static condition, and increase the velocity of the circulation. The potential is converted into kinetic energy, there is a more rapid interchange of fluids between the blood and tissues, the hydration of the tissues is lessened, while the oxygen-carrying power of the blood and the oxidation of effete products are augmented, the congestion of all the internal organs is diminished, and their functional activity heightened.

When there is any marked cardiac failure, the quantity of fluid consumed should be restricted to the smallest possible amount, and, in a large number of cases, one pint of liquid, including the fluid portion of the food, will be found sufficient, while if there be any dropsy, the quantity may, in many cases, be reduced still further.—*Provinc. Med. Jour.*, Aug. 1, 1888.

ALKALIES IN ECZEMA.—DR. FREDERICK PEARSE, acting on the principle that acids applied to an acid-secreting surface and alkalies to an alkaline-secreting surface diminish the respective secretions, has treated a large proportion of cases of eczema for many years by alkaline applications. The method may be termed unphysiological, on the ground that the morbid exudation of the eczematous skin has no parallel with the normal secretion of glands, but his answer for the present must be the results. There is not the slightest doubt that an acid applied to an eczematous surface will irritate and increase the exudation, and he is equally satisfied that alkalies, judiciously applied, will have a contrary effect. Whatever views we may have on the pathology of eczema, the great diversity of methods shows that at present we have no very definite *rationale* of treatment. At the same time he does not argue that alkalies have any specific action. No one who has seen much of eczema can doubt that the associated disorder to which these patients are most subject is that connected with their digestive organs. The internal treatment is therefore undoubtedly of paramount importance. The one thing which appears most successfully to meet this indication is some saline aperient, which produces a "weeping" from the mucous surface of the intestines and also hurries on the contents.

This clinical fact suggests that the cause of eczema lies in some imperfect process of digestion, whereby abnormal chemical compounds are absorbed and, circulating in the blood, irritate especially the skin structures. These compounds are unknown. Not only, however, are saline aperients successful in the treatment of eczema, but alkaline combinations are especially so. The most common prescriptions contain these drugs in endless variety.

This treatment is very successful for adult patients, but it is not nearly so useful in the eczemas of young children. In these cases, however, alkaline external applications are as successful as in those of riper years, if not indeed more so. Whether the fault in adult life lies in deficiency, and that of eczematous children in excess, of secretion of acid gastric juice, is difficult to decide; but the internal administration of alkalies combined with saline aperients, in the eczemas of grown-up people, is that on which the greatest general reliance can be placed. In children, however, an exactly opposite line of treatment will often be found successful. It is especially in scrofulous children and in infants that he has found benefit from the internal administration of hydrochloric acid. These little patients have generally some palpable digestive disturbance. He has frequently found unexpected benefit from the internal administration of nitrohydrochloric acid combined with sulphurous acid, at the same time pursuing the external application of alkalies. These latter may be used as solutions of bicarbonate of sodium (5 or 10 grains to the ounce), sometimes combined with small quantities of glycerine, or as weak solutions of liquor potassæ (10 or 30 drops to the ounce). As a general rule, it may be said that the more acute the eczema, or rather the more copious the exudation, the weaker must be the application. It should be made, whenever possible, continuously.

In chronic cases an alkaline ointment may sometimes be used, such as one containing 10 to 30 grains of bicarbonate of soda to the ounce of vaseline.—*The Practitioner*, October, 1888.

STRONGYLUS PARADOXUS.—M. J. CHATIN recently exhibited before the Paris Académie de Médecine a specimen of this intestinal worm, passed by a butcher, at Oloron, in the department of the Basses-Pyrénées. The patient had been subject for some time to gastro-intestinal disturbances, and had already passed another specimen of the same parasite. *Strongylus paradoxus* is a small round worm; the exhibited specimen measured a little over half an inch. The species was discovered in the lung of a wild boar, by Ebel, at the end of the last century, shortly after Modeer and Bremser discovered in Sweden and Vienna that this *Strongylus* infected the bronchial tubes of domesticated swine. Rayer found

the parasites, in the same anatomical situation, in a pig in the Paris market in 1844; two years later Bellingham discovered the parasite in Ireland. For long, experts have admitted that *Strongylus paradoxus* infests the lungs of swine, causing an affection which was rare till recently. Dr. Cobbold, in 1879, and M. Chatin, in 1881, both showed that swine were becoming more subject to this worm. The former pointed out its danger when a large number of worms collected in the bronchi. In 1850 the wild boars preserved for the Royal hunt, near Berlin, were decimated by this *Strongylus*. M. Chatin notes that no report of the existence of this species in man can be found in medical literature, but the alleged new species, *Strongylus longevaginatulus*, found infesting the lungs of a child, aged 6, at Klausenburg, Transylvania, in 1845, is evidently, in M. Chatin's opinion, identical with *Strongylus paradoxus*. Hence, in reality, the latter species has twice been found in man, and on the first occasion it infected the lung and caused death. The worm is very tenacious of life, and its embryo may remain in water, or completely dried up for a year without undergoing any change; yet, if then swallowed by a pig in fodder or drink, will rapidly develop and propagate. M. Chatin believes that in the case of Oloron the parasite was probably swallowed in drinking-water. Since swine are becoming more and more subject to *Strongylus paradoxus*, he thinks that sanitarians must be watchful, lest man should become frequently subject to the ravages of a worm liable, from its favorite habitat, to cause more mischief than can be wrought by *Tenia*, *Oxyuris*, *Lumbricus*, or even the leech-like *Dochmius duodenalis*, which caused anæmia amongst the men employed in the St. Gothard Tunnel.—*Brit. Medical Journal*, August 18, 1888.

PAQUELIN CAUTERY IN EPIDIDYMITIS.—According to DR. BREWER, good results are derived from the use of the Paquelin cautery. He has employed this method in forty-six cases, and in two cases only was it necessary for the patient to remain in bed after the first application, and in one the real cause of the enforced rest was a co-existing cystitis. The details of the procedure, according to Dr. Halsted, who first suggested it, are as follows: The cautery point is heated to a white hot temperature, and the surface of the skin overlying the affected organ is then lightly touched with the cautery. The operation requires only a few seconds, and need not be more than moderately painful. A dressing of iodoform ointment is then applied, and the patient is instructed to wear a suspensory bandage. Instant relief from pain is said almost invariably to follow the employment of this treatment, and the patient, as a rule, is able to be up and walk about in comparative comfort. The author adds that he has also found that

marked relief from pain in gonorrhœal rheumatism can be obtained by a similar use of the cautery and iodoform ointment.—*Medical Press*, August 1, 1888.

TRAUMATIC SUBDURAL ABSCESS OF THE BRAIN.—In a paper on this subject, in which some cases are recorded, SIR WILLIAM STOKES draws the following conclusions :

1. That after the primary symptoms of cerebral traumatism have subsided, there is frequently a latent period of varying length, during which there are no distinct brain symptoms connected with abscess formation whatever.

2. That their appearance is as a rule sudden, and if uninterfered with, they run a rapidly fatal course.

3. That the occurrence of pus production resulting from cerebral traumatisms is not incompatible with a perfectly apyrexial condition.

4. That this latter fact will probably aid in differentiating traumatic cerebral abscess from meningeal or encephalic inflammation.

5. That both as regards color and consistence there is great variety in the contents of cerebral abscess cavities, and that as shown in Wilm's case, published by Rose, of Berlin, they may become transparent.

6. That antisepticism has largely diminished the risks of the operation of trephining.

7. That having regard to the great mortality of cases of cerebral abscess when uninterfered with, viz., from 90 to 100 per cent., that the operation is indicated even when the patient is in extremis.

8. That in the case where the trephine opening does not correspond to the situation of the abscess, exploratory puncture and aspiration may be employed.

9. That by the adoption of this measure the necessity for multiple trephine openings can be largely obviated.

10. That the employment of a blunt-pointed aspirating needle, as suggested by Rentz, is probably the safest mode of exploration and evacuation.

11. That drainage is desirable in the after treatment of such cases.

12. That both during and subsequent to operative interference in these cases a rigid antisepticism is imperatively required.—*Annals of Surgery*, Oct., 1888.

TREATMENT OF TYPHLITIS.—BOUCHARD'S method is as follows : Soothe the pain by a hypodermatic of morphia, if very sharp ; if not use a thick layer of Neapolitan ointment with belladonna, covered by a large and very hot poultice. Give aseptic rectal injections twice a day, with at least a litre of water, to which is added 5 grams of borate of soda, and two or three teaspoonfuls of tincture of benzoin and camphorated alcohol

mixed. Give injections very slowly. Patient must have absolute rest. Give only the mildest purgatives, if any—such as magnesia in water. For diet, milk and alkaline water ; later, milk with yolks of eggs. If there is at the end of a fortnight, a thickening around the cæcum, apply a small blister.—*Revue Therapeutique*, No. 4, 1888.

SUBSTITUTE FOR NITRITE OF AMYL.—MM. BALS and BROGLIO describe as the nitrous ether of dimethyl-ethyl-carbinol (amylene hydrate) a very mobile liquid, lighter than water, of an amber color, having an odor similar to that of camphor and terpine, insoluble in water, slightly soluble in glycerine, and very soluble in ether, alcohol and chloroform. While its physiological action is more marked than that of amyl nitrite, it does not cause flushing of the face, and as much as 80 or 100 drops can be inhaled daily.

ANTISEPTIC INJECTION IN SEPTICÆMIA.—MOIZARD, in a case of septicæmia occurring in pyo-pneumo-thorax, injected into the pleural sac an ounce of the following mixture :

Tincture of iodine.

Alcohol.

Solution iodide of potass. (1:10) āā ʒij.

The patient recovered, though the case was a very grave one.—*Union Médicale*, Aug. 11, 1888.

HYPODERMATIC INJECTIONS OF ANTIPYRIN.—DERLON advises the use of cherry-laurel water to obviate the pain of subcutaneous injections of antipyrin. He uses the following formula :

R. Antipyrin. grs. 30.
Cocaine hydrochlor. gr. i.
Cherry-laurel water. ʒj.

This should not be used with morphine injections, since cherry-laurel water increases the pain in these cases.

COMBINED CHLOROFORM AND COCAINE ANÆSTHESIA.—OBOLISOVSKI proposes to inject cocaine at the site of operation after the patient is chloroformed. He claims the following advantages : 1. The local anæsthesia is more effective. 2. Vomiting occurs less frequently. 3. The waking is easier and the after-weakness less. Nervous subjects are sometimes much excited by the cocaine injection.—*Journal de Médecine de Paris*, Aug. 12, 1888.

SOWTHISTLE ; SONCHUS OLERACEUS.—DR. S. F. LANDRY has investigated the hydragogue properties of this plant. It acts strongly on the liver, duodenum and colon, and resembles elaterium in causing large watery discharges. It has given good results in ascites and hydrothorax. It should be combined with carbonate of magnesium to prevent griping, or else with mauna, aniseed, or some other aromatic stimulant.

THE
Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, OCTOBER 27, 1888.

BACTERIOLOGICAL EXAMINATIONS AT
AUTOPSIES.

In reading recent medical literature, says BABES, it seems that a precise bacteriological examination is reserved for special cases of infectious diseases. He is convinced that bacteriological researches should be made systematically in all autopsies in infectious diseases. To this end, in the necropsy on man all the precautions should be taken as in the case of an animal; it should be made in a laboratory, where the micro-organisms in the tissues and organs may be collected. In the *Archives Roumaines de Médecine et de Chirurgie*, Babes has a contribution on the technique of such autopsies.

In the first, he says, scrupulous cleanliness of the hands should be observed. The cadaver may be preserved at a temperature of 5° or 6° C. The body should be washed with a 1:1000 solution of corrosive sublimate, and all the water used during the autopsy should be such a solution. The instruments should be sterilized in a stove. The first section of the skin, from the chin to the pubes, should include the subcutaneous cellular tissue and the muscles, and is made with one sterilized knife. Another sterilized knife is then used to open the peritoneal and thoracic cavities. The liquids contained in the peritoneal, pleural and pericardial cavities are then sterilized by plunging a platinum wire into them, and they

are then collected in culture tubes or on plates previously prepared. When these liquids are used for inoculating animals, a sterilized syringe should be used. For the bacteriological examination of organs, the surface of the organ is burned with a hot glass rod over an extent of about 2 cm. The tissue underlying the burn is then torn out. From this fragment is taken, by means of a red-hot platinum wire, a piece to be used for inoculation. The liquids contained in the intestines, bronchi, bladder, ureter, etc., are collected on gelatin plates. At the same time slides are prepared for micro-bacteriological examination by placing on them a few drops taken from the liquids, and leaving them to dry. By means of a sharp sterilized scalpel pieces are removed from the organs and placed in alcohol, for subsequent microscopic examination. At each autopsy at least a dozen slides should be prepared of the liquids and organs, and cultures should be made in moist chambers, and culture tubes with gelatin, agar-agar or serum. During the autopsy several guinea-pigs, rabbits and mice should be inoculated.

We do not know, says Babes, why in man the course of infectious diseases is so variable in different individuals. In the lower animals an experimentally produced infectious disease has, under the same conditions, the same type—an absolute identity, in animals of the same species. "Under the same conditions" seems a sufficient explanation, or at least the key, to the variable course of these diseases in man, since it is very seldom that we find human beings "under the same conditions." Babes says that in making autopsies under the best conditions for the collection of bacteria, he has found that this variability of symptoms in the same infectious disease in different patients is seen especially in cases of complication of the principal disease by secondary infections, also caused by bacteria. In connection with this the reader will remember the editorial article in *THE JOURNAL* of September 29, on Dr. Bayard Holmes paper on "Secondary Infection in Typhoid Fever." Two years ago Babes presented to the Medical Society of Budapest a bacteriological analysis of autopsies made at the Children's Hospital; and from this it seems that it is the bacteria of diseases consecutive to wounds that more often complicate the infectious diseases and cause death. In the bodies of children dead of infectious diseases, examined a short time after

death, streptococci and some of the five species of saprogenic bacteria are usually found.

An analysis given by Babes shows that it is well to search for and to cultivate the bacteria in all autopsies. Sometimes new bacteria are found, pathogenic for animals. Since in many of the internal diseases the complications that cause death are caused by the same microbes as are found in traumatism, it may be concluded that at some particular time, by reason of the primary disease, the tissues have lost their power of resistance to the invasion of certain bacteria. This is seen in that curious and exceptional complication, malignant œdema in the course of typhoid fever, as described by Brieger and Ehrlich. We must also take into account the frequency of complications due to the habitual association of certain bacteria with certain determined diseases. As an example of this may be mentioned cutaneous gangrene in malignant pustule, due to the presence of micrococci that constantly accompany the bacteria of charbon. In most cases, as already said, it is the bacteria of pus that penetrate the organs, and cause a septicæmia analogous to that caused by suppurating wounds. The chronic infectious diseases, such as phthisis and leprosy, often show local lesions caused by bacteria, as the streptococcus pyogenes, the diplococcus of pneumonia, and sometimes the tetragenus, in tuberculosis; these are habitual causes of the various complications on the part of the lungs or other organs. In leprosy staphylococci are often found. In actinomycosis the abscesses are often found to contain the staphylococcus aureus and streptococcus pyogenes, and it is very probable that the production of pus is due especially to the bacteria that enter secondarily, after the organisms that cause the primary disease.

There are also a number of diseases not caused by bacteria (or not known to be thus caused) that may become the seat of numbers of micro-organisms. This is true of certain tumors, which ulcerate and are invaded by colonies of bacteria. As a rule, tumors are less resistant to the invasion of bacteria than sound tissues. The paper of Babes is a very suggestive one, and his suggestions well worth careful consideration.

DR. JOS. M. WOOD, of Kansas City, died on September 19. He was born in 1810 in Kentucky, and began practice in 1830.

SIR DYCE DUCKWORTH ON MEDICAL BULLETINS.

In a recent lecture to the students of St. Bartholomew's Hospital SIR DYCE DUCKWORTH said: I am strongly of the opinion that at the present time a great deal of apprehension and unnecessary suffering is entailed on our patients, especially in the upper classes of society, by the details and clinical minutiae that too often and most improperly find their place in the bulletins respecting important persons. Such a practice should be firmly discountenanced on every account, and it is certainly satisfactory to know that it does not emanate from the highest ranks of our profession. I believe, further, that many of our patients suffer nowadays more, and are actually less amenable to treatment, than was formerly the case, because there is so much widely spread knowledge of disease conveyed in lay periodicals, and because so many advertisements of vaunted specifics and new remedies are puffed before the public.

Sir Dyce Duckworth said the foregoing in connection with the discussion in clinical lectures, before the patients, of the causation and morbid anatomy, and referred to the practice of the late Dr. Peter Mere Latham, who always withdrew his class from the bedside to discuss these matters. Sir Dyce thinks that such discussions are both inhuman and improper; that we have no right to discuss the horrors of the deadhouse in the presence of patients committed to our charge. While these discussions do not shock us, they may shock and greatly injure the patients, and we must never forget that it is our first duty to be humane, and to regard the patient's interest as first and paramount.

In regard to medical bulletins it may be said that they are the outgrowth of recent years, especially due to the so-called "enterprise" of the newspapers, which first persuaded themselves, and then the physicians, that the public must have all the details possible. In the case of distinguished persons there can be but little objection to the physicians letting the public know how they are in general terms; but it certainly is no business of the public to know all the minutiae of symptoms and treatment, how often a laryngeal mirror is used, a catheter passed, or a nutrient enema given. The newspaper writers and the public do not understand more than a small fraction of the medical terms used in minute bulletins,

and can get but an erroneous impression from them. The fierce quarrel now in progress between Sir Morell Mackenzie and the German physicians in the case of the late Emperor Frederick should be a lasting warning to physicians not to issue minute bulletins, nor air the progress of cases in the newspapers. In the case of a public man ill, the public is interested in the case only to the extent of knowing in a general way *how* he is, not why he is better or worse, what his daily symptoms are, and what the plan of treatment is.

As we all know, the physicians in a case cannot always agree; when they do not agree, and issue bulletins, these are sure to bring the whole matter of disagreement before the public. As a result we find in the newspapers such editorial comments as the following:

"The German bureaucrats are busy burning the book of Dr. Mackenzie. The work shows that it was not he but the native doctors who hastened Frederick to his grave. The physicians of Fatherland will reply with a hundred books at least, and the question of our youth, 'Who Killed Cock-Robin?' will be forgotten in the quest for the great healer who, for a fee of one hundred thousand, gave the sick Emperor that particular *coup* which served him.

"Yet Frederick is as dead as his ancestor, the great Elector. What do the doctors gain by revealing the foibles and the impotency of their profession? So long as no respectable man will die without the presence and attention of a doctor, why should not the learned men rest contented with the respect in which they are held?"

What do we gain but a certain amount of distrust on the part of the public, and too frequently a snub when we go before the public with a matter of importance to the public?

EDITORIAL NOTES.

HYSTERICAL SPASM OF THE ŒSOPHAGUS.—BORGIOTTI records an interesting case of a woman, aged 31, who, having had four attacks of hysterical convulsions, was taken with spasmodic dysphagia at the end of a fever that lasted two months; in addition to the dysphagia was pyrexia, frontal headache, severe pains behind the sternum. At each attempt to swallow, all food was rejected. This œsophageal spasm continued without interruption for 530 days. Oc-

asionally it could be overcome by means of a sound, but it rarely permitted the passage of even fluid food. The part of the œsophagus affected corresponded with the dorsal spine from the fourth to the seventh cervical vertebra; at this point the passage of the sound caused pain. The spasm was finally cured by means of Verneuil's œsophageal dilator. After the first dilatation fluid food could be introduced by means of the sound. On the sixth day the patient could swallow solid food. During the first six days the patient's weight increased five pounds, and the temperature, which had been subnormal for some time, rose to normal.

PREVENTION OF OPHTHALMIA.—DR. LITTLEJOHN, Medical Officer to the Hanwell School, London, at the conclusion of a report on ophthalmia in the central school district of London, summarizes his suggestions as follows: 1. The division of those attacked into small groups. 2. The appointment of a sufficient number of experienced nurses. 3. Abundant open-air recreation for those attacked. 4. A system of cleaning school-rooms, etc., which shall avoid damp boards as the result. Abundant ventilation, especially of dormitories; artificial warmth and extra clothing being utilized when needed. 6. Improvements in bathing and washing; including the provision of large open-air baths. 7. The washing and efficient disinfection of each towel after use. 8. More outing in the country lanes during half-holidays; together with provision of means for exercise and games. 9. Such arrangement of seats in the school-rooms that there shall be no strain on the eyes, and that the sun's rays shall not fall directly on the eyes.

ELECTROLYSIS IN PARENCHYMATOUS GOITRE.—WEINBAUM, of Kovel, describes in a recent number of *Urtch* two cases of parenchymatous goitre cured by electrolysis. The electricity was applied for ten or fifteen minutes at a sitting, supplied by a battery of 20 cells connected with two gold needles; these were thrust several millimetres into the tumor at two points diametrically opposite. Moderately strong currents only were used. In the first case one hundred and fifty séances were had in eight months, during which time the tumor gradually dwindled away. The patient was seen about a year afterwards, and was in complete health. There was no trace of

the swelling except slight cicatrices at the sites of small ulcers made by the needles. In the second case there was but little left of the goitre after fifty séances, and the general health was much improved. Weinbaum tried electrolysis, but unsuccessfully, in a case of dense fibrous goitre.

YELLOW FEVER continues at Jacksonville, Florida, though the number of cases are greatly diminished. The number of new cases reported on the 22d inst. is 43, and deaths, 1. Of the new cases 8 were whites and 35 colored. The whole number of cases reported since the commencement of the epidemic in Jacksonville is 3,839, and the number of deaths to date, Oct. 22, 332. The danger of any general spread of the disease through the Southern States the present season has evidently passed, and most of the quarantine arrangements outside of Florida have been discontinued. The volunteer physicians who have been on duty at Jacksonville are reported to have tendered their resignations because their services are no longer necessary.

APPARATUS FOR RECORDING LATERAL CURVATURES OF THE SPINE.—DR. C. L. SCUDDER describes in the *Boston Medical and Surgical Journal* an apparatus that records:

1. The lateral curvature of the spinous processes of the vertebræ.
2. The outline, height, and breadth of the shoulders.
3. The outline, height, and breadth of the hips.
4. The relation between the arms in the natural position and the outline of the hips.
5. The distance of the scapulæ from the spine.
6. The antero-posterior curves of the back.
7. The curve of rotation in the dorsal region.
8. The curve of rotation in the lumbar region.

The tracings may be easily reduced for records.

AN ITALIAN MEDICAL SOCIETY, on the plan of the German Society of Internal Medicine, is proposed under the name Società Italiana di Medicina Interna. The proposition was to hold the first meeting in Rome this month. Discussions on any one subject are not to exceed one sitting, the introducers of the discussion being allowed half an hour, and subsequent speakers a quarter of an hour. Each introducer is to have ten minutes to close the discussion. Papers must be read within twenty minutes, and for the discussion of them each speaker is allowed ten

minutes, no person being allowed to speak more than once.

OUABAÏNE, $C_{30}H_{45}O_{12}$, is a crystallizable derivative of Ouabaïo, which belongs to the family Apocynaceæ and grows in the mountains of Comal, Eastern Africa. ARNAUD has isolated from the wood about 30 per cent. (!) of the substance he calls ouabaïne, which is slightly soluble in cold water, and very soluble in boiling water, and insoluble in chloroform, anhydrous ether and absolute alcohol. The physiological experiments made thus far show, according to Varigny and Langlois, and E. Gley, that its physiological action is similar to that of strophanthus.

A DECISION IN REGARD TO MORAL INSANITY has been given by the Supreme Court of Connecticut as follows (in *Anderson vs. The State*, 43 Conn., 515): It is true that courts have been slow to recognize this form of insanity as an excuse for crime. Nevertheless, that it exists is well understood, and that in some cases it is clearly defined.

THE VACCINE AND EXPERIMENTAL LABORATORY of the University of Missouri, at Columbia, now announces through Dr. P. Paquine, State Veterinarian, that bovine vaccine will be supplied in the State of Missouri in the first week in November, and the first weeks of February, May and August, 1889.

THE JOURNAL OF OPHTHALMOLOGY, OTOTOLOGY AND LARYNGOLOGY, is the title of a new periodical announced to be commenced in January, 1889, in New York, and edited by Geo. S. Norton, M.D., assisted by Charles Deady, M.D. It is to be issued quarterly, at \$3.00 per annum.

THE SALINE COUNTY (KANSAS) MEDICAL SOCIETY was organized on August 28, with Dr. A. S. M. Anderson, of Salina, President, and Dr. J. R. Crawford, of Assaria, Secretary, and with a charter membership of ten. It meets on the last Tuesday of each month.

DR. GAMALEIA has gone to Paris to explain his system of vaccination against Asiatic cholera. He proposes to go to India in March, to test his methods on cholera patients.

THE SOUTH KANSAS MEDICAL SOCIETY will hold its semi-annual meeting at Hutchinson, Kansas, on November 13.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting April 25, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

DR. J. H. MUNDELL read the history of the case and presented the specimen of

AN HYDATIDIFORM MOLE.

(See p. 592.)

DR. SMITH stated that this was the fifth growth of this character presented to the Society within the past year, thus apparently militating against the statement that it is rare.

DR. PHILIP MARVEL read the history of a

CASE OF PLACENTA PRÆVIA.

(See p. 591.)

DR. MARVEL, in opening his paper, stated that he only wished to confine his remarks to the report of a single case. He had seen other cases, but did not have the requisite data. He interpolated that ergot and pulsatilla failed to produce contraction of the uterus, and that he had never known pulsatilla fail before.

DR. REYBURN had assisted Dr. Marvel in the case. He had regarded the case as hopeless when he saw the woman on the day of the delivery, on account of pulmonary phthisis and a narrow pelvis. She was almost exsanguinated and was without uterine pains—they being absolutely absent notwithstanding the administration of ergot, pulsatilla, stimulants, strychnia, liq. ammoniæ, etc. In reviewing the case he could not see anything that could have been done that was left undone.

THE PRESIDENT asked Dr. A. F. A. King to give the Society the recent orthodox treatment of placenta prævia.

DR. KING: The present orthodox treatment is gradual version by the bipolar method, and getting down one foot and letting it act as a plug, and then bringing down the child as gradually as the cervical relaxation will permit. It is very easy to criticise anyone's treatment of a case. No one man's practice could be taken as a criterion, on account of the small number of cases. But he strongly advised the German bipolar gradual version. He thought it was in just such a case as this that Simpson would have removed the whole placenta first, thus preventing hæmorrhage.

DR. FRIEDRICH had had a similar case on the 10th inst. The woman was in the water-closet and thought she was having a stool, but she was flooding. He tamponed and stopped the hæmorrhage. In the morning he removed the plug and the hæmorrhage began again. Dr. W. W. Johnston was called in consultation and advised him

to continue the treatment and wait for pains. Dr. J. returned at 10 P.M. and, there being some dilatation, they separated the placenta, turned and delivered, but the woman died about an hour later.

DR. KING: What did Dr. Friedrich mean by separating the placenta?

DR. FRIEDRICH: Partial separation.

DR. KING: Rupture of the membranes in the beginning without regard to the viability of the child was recommended.

DR. OBER had seen a lady about five months ago for another physician. Digital examination revealed a complete placenta prævia. The hæmorrhage had been very insignificant and there was absolutely no uterine contraction. He thought best to temporize. When the attending physician returned, about forty-eight hours later, he thought best to deliver at once, notwithstanding the flabby condition of the uterus, to which his attention was called. The doctor turned and delivered at once without an anæsthetic. Four hours after delivery and two hours after Dr. Ober had left the house, the woman died of post-partum hæmorrhage, though she was in excellent condition at the time of delivery. The child lived. In Dr. Friedrich's case the woman did not seem to be much affected by the anæsthetic, though hard to get under its influence.

DR. REYBURN, about three years ago, had seen a case with Dr. Morgan in which both mother and child lived. The head of the child descended and labor progressed well after partial separation of the placenta.

DR. SMITH thought it very unwise to trust to the head as a tampon acting against the margin of the uterus. He succeeded in delivering the child alive in a case in which he had previously used forceps, but the woman died. The next case he lost was one in which he had advised extraction of the child after a slight hæmorrhage upon walking about the floor. About two weeks later she flooded and was delivered by nature, and died of exhaustion about a week later. This case was seen with Dr. Burrows, who told him that he had seen "six cases of placenta prævia, five of which died and the other was not a case of placenta prævia."

DR. M. MUNCASTER favored the use of cannabis indica in 10 to 15 drop doses.

DR. MARVEL had seen four cases of placenta prævia: one in his own practice, two in consultation, and the one reported to-night. In his own case he thought it was hydrorrhœa at the first flow, and it was not until the second hæmorrhage, at the eighth month, when he made out partial placental detachment. In one case both mother and child lived. In three the mothers died. In two he used Barnes' dilators; in one turned. Would like to have heard something about the causes of placenta prævia. According to Goodwin, Mundé, Lusk and others, rapid labor should

be induced after the sixth or seventh month. Penrose taught to temporize at first, but if danger threatened to dilate and deliver. Goodell sanctions this.

Stated Meeting, May 16, 1888.

THE PRESIDENT IN THE CHAIR.

DR. ROBERT T. EDES read a report of
A CASE OF CEREBRAL TUMOR.

History.—A lady, aged 58, some three years ago had neuralgia in the head, which was cured, as she supposed, by massage. For two years she had epileptiform convulsions, together with slighter attacks resembling petit mal. Both were followed by temporary aphasia, and the more severe ones by slight signs of right hemiparesis. Headaches were neither frequent, severe nor localized. There was no hemianopsia, and the fundus of the eye, which, however, was not examined for nearly a year before death, was normal. A few weeks before death the aphasia and paretic symptoms became more marked and persistent.

There was a sarcoma on the left occipito-temporal lobe between the fourth convolution (lobulus fusiformis) and the posterior horn of the ventricle. The point of the temporal bone was softened. The island of Reil was swollen and pale, and under the microscope showed proliferation of the superficial layer and degeneration of the deeper pyramidal cells.

DR. SCHAEFFER had examined a tumor of this kind removed from a patient of Dr. J. T. Young. It was a sarcoma, situated in the left anterior lobe, and surrounded by a distinct capsule. The history was very meagre; headache was very prominent and was the only symptom dwelt upon by the physician. Mental derangement was absent. The tumor was adherent to the inner surface of the temporal bone, ovoid in shape, and one and a half to two inches long.

DR. KLEINSCHMIDT: The paper gives a correct history of a very interesting case. The diagnosis was in doubt and could only be made with difficulty. The recent advances in brain surgery make this case more important. Could it have been possible to have made out the location of the tumor in this case from the history? By no means. A lesion may involve either the frontal, occipital or sphenoidal lobe without showing any motor, sensory or special symptoms. This tumor was located in a locality of which we know the least. There was no disturbance of vision. Dr. Edes said there was amnesic aphasia and correctly believes that the lesion in the island of Reil was not the most important.

DR. EDES: The symptoms were due to the secondary lesion and not to the primary. It was not possible to have diagnosticated the location of the tumor from the symptoms.

(To be concluded.)

Gynecological Society of Chicago.

Regular Meeting, Friday, June 29, 1888.

THE PRESIDENT, HENRY T. BYFORD, M.D.,
IN THE CHAIR.

DR. DANIEL T. NELSON presented a
SARCOMA OF THE OVARY WITH HALF-TWISTED
PEDICLE, REMOVED BY AUTOPSY.

I first saw the patient in consultation several days before she was taken to the hospital. She was a patient of Dr. J. E. DeWolf, of Englewood, whom I invited to be present to-night, but unfortunately, he had a professional engagement. She was taken to the Woman's Hospital, but operation was delayed from one day to another, waiting for her to improve in condition, which she never did, and we have the tumor here by post-mortem removal. Her history is very scant, and yet some points in it are of interest, and will raise queries that I trust some of you will be able to answer.

Mrs. M. entered the Woman's Hospital June 7, 1888; occupation, housewife; age at puberty, 12; age on entering the hospital, 39. She was born in America of French and German parents; twice married; the first time seven months, second time seventeen years. She was the mother of nine children, one by her first husband and eight by her second. After the birth of her last child, seven years ago, she did not menstruate for four years; since that time there have been irregular menstrual periods. It is so stated in the history, and yet I think we should rather say there were hæmorrhages from the uterus during these past four years. One year ago she noticed a fluid discharge from the rectum. This is a nice question in pathology, to my mind. She gave evidence of some inflammatory process in the right ovarian region—tenderness, soreness, some elevation of temperature, was confined to bed for a time, and there was a sudden discharge of a considerable quantity of blood. Such quantities are never rightly estimated, but the amount was guessed at by the patient at more than a pint, and supposed by her to have passed from the rectum. Perhaps that was not correct; at all events, after that bloody discharge, she was relieved of the swelling, the tenderness, the inflammatory process, whatever it was, and resumed her ordinary duties. Some time afterward, but unfortunately the record does not say how soon afterward, she began to suffer from swelling in the same region, that continued up to her death. There was constant soreness in the right inguinal region; three months ago the abdomen began to enlarge and she to gain in flesh, strength, and vigor, so that her attending physician, without making a local examination, and especially her neighbors, supposed she was pregnant. She felt

comparatively well until four weeks previous to entering the hospital, when she began to suffer severe pain, tenderness in the right inguinal region, and there was evidence of some kind of tumor. On going to bed with her last illness, about a week before she entered the hospital, her physician became satisfied that there was something more than pregnancy, that there was inflammation of some type. Some days before she entered the hospital I saw her in consultation, and advised a removal to the hospital in the hope that there might be some kind of an operation for her relief. On entering, her temperature was $100\frac{2}{3}^{\circ}$ F., pulse 104. The following day the temperature was $100\frac{4}{5}^{\circ}$ F., pulse 132; the following afternoon the pulse was 132, temperature 100° F. and a fraction. On the morning of the fourth day the temperature ran down to $99\frac{1}{2}^{\circ}$ F., and the pulse to 119. Possibly an operation might have been performed then, and her life saved, but a more convenient and better time was sought for, that never came. There were the usual evidences of peritonitis, and death in the usual way followed. When she first entered the hospital her bowels were moved, but not afterward; vomiting came on the third day, but passed off on the fourth, when probably an operation could have been performed with the possibility of saving life. She died on the sixth day after entering the hospital, and a few hours after death a post-mortem examination was made and this tumor removed. The appearance is somewhat changed now, but yet it presents fairly well the appearance at the time of the autopsy. You notice the dark, venous, congested appearance of a portion of the tumor. This was the anterior portion as it presented against the abdominal wall, very slightly adherent; no adhesions from old inflammation, either to omentum or other structures, but a *half-twisted pedicle*. The pedicle has been tied in such a way as to retain that appearance as much as possible. Here we have the broad ligament that is simply half-twisted and tied in that position on purpose. The evidence of completely twisted pedicle and death of the tumor were not present. There was simply an increase in size resulting from the congestion, but no sloughing, no death of the part—a slow, inflammatory process had taken place in the tumor and subsequently in the peritoneum, that was the cause of death. The obstruction of the bowels, I believe, was due to the peritonitis, and not to pressure from the tumor. It has not been my privilege to see a patient with a tumor and twisted pedicle, but it seems to me I could have recognized it; but this being only half-twisted, the circulation was impeded, not stopped. The tumor has been examined by Dr. Frank Carey, and the report is sarcoma. There was, so far as I saw, and I made a rather hurried examination, no evidence of the disease extending to other

organs; there is no evidence of it in the pedicle; there was no evidence in the glands or intestines or structures adjacent, so it seems as if it could have been entirely removed if the operation had been performed during the life of the patient. The uterus was a little enlarged, but no other evidence of disease about it. I made a diagnosis of malignant tumor, without being exactly certain as to its nature, but it seemed to me malignant on account of its rapid development and the age of the patient. I did not regard it as a uterine tumor, as the uterus was movable and the tumor seemed to be separate from it. Within the abdominal walls there was a considerable amount of ascitic fluid, so that the abdomen was very tense, and it was difficult to say whether or no the tumor could be moved readily within the abdominal walls. I was unable to say whether or no there were adhesions, but from the ascites I hoped not.

DR. ETHERIDGE: The doctor said that if the pedicle had been completely twisted he could have determined it. I would like to ask how?

DR. NELSON: The evidences of acute inflammation would have been much more rapid and severe, also the appearance of shock. In other words, the patient would be something in the condition of one with an internal hæmorrhage, there would be evidence of greater disturbance that would come on suddenly after exercise, while in this case there was no sudden beginning of the evidence of inflammation, it came on gradually.

DR. ETHERIDGE: Did you diagnose a solid tumor?

DR. NELSON: It seemed to me that it was; there was considerable fluctuation and ascitic fluid, but it seemed to me a solid tumor, and that was my reason, together with the age of the patient, for believing it was malignant. I supposed it was carcinoma and not sarcoma. I would like to ask whether that hæmorrhage, indefinitely described as from the rectum, could by any possibility have been the result of a congested condition of the tumor that was freed by an opening through the Fallopian tube, the pedicle having been untwisted, and whether the attack a year or more ago was similar to the one she died of, only the pedicle was more twisted this time, so nature could not relieve herself in this way. In reply to Dr. Etheridge, he said that the rectum was not examined.

DR. FENGER: As a rule, under other circumstances, malignant tumors have as one of their main characteristics invasion of the surrounding tissues and, consequently, adhesion and inflammation enough to bind the tumor to the surrounding organs. But we know that, in sarcomas or carcinomas of the ovary, it is common to find, as in this case, no adhesions. This fact is probably explained by the early setting in of ascites, as we know that the presence of fluid, ascitic fluid, saline solution, etc., in the abdominal cavity, helps

to prevent adhesive inflammation by keeping the tumor away from the loops of intestine.

DR. HENRY T. BYFORD: I examined the patient once, in life, and was present at the *post-mortem* examination. I satisfied myself that the tumor was not connected with the uterus, for although pressing upon the tumor moved the uterus, yet lifting the tumor did not. The course of the disease appears to have been, first, the twisting of the pedicle, then venous congestion, bursting of small blood-vessels, rapid distension and inflammation of the tumor, especially on the side that we now see to be black. The case was not one of ordinary peritonitis; there was not much tenderness, except when the tumor was directly pressed upon. Intermittent attacks of partial obstruction of the bowels, due, undoubtedly, to the presence of this heavy tumor, hastened her death.

DR. CHRISTIAN FENGER presented a

FIBRO-CYSTO-SARCOMA OF THE UTERUS.

This specimen was removed by laparotomy from a woman of 35, who had a tumor the size of a child's head, immovably connected with the uterus at the fundus, and also two small myomas that could be felt through the vagina. The large tumor showed fluctuating places on the surface, by palpation through the abdominal wall, and I concluded that it was an ovarian cystoma, either located in the broad ligament or sufficiently adherent to the uterus to make them move together. At the operation I found it to be a cysto-fibroma, or fibro-cysto-sarcoma, subperitoneal, but attached by the broad base to the uterus at the fundus. After temporary elastic constriction around the cervix, the tumors were enucleated, and as the uterine cavity was not opened, I united the wound of the wall of the uterus with buried step sutures, deep and superficial, and a final continuous suture along the inverted borders of the peritoneum.

At the close of the operation all hæmorrhage had apparently stopped, consequently I did not drain. In the course of the first week some fever set in, and on the tenth day I reopened the lower border of the wound and evacuated about three to four ounces of blood mixed with pus, from a cavity surrounding the body of the uterus. The evacuation and subsequent washing out and drainage did not have much influence on the patient's condition; the fever continued, she had a large gangrenous bed-sore over the os sacrum and died six days later, in the third week after the operation. The autopsy showed no peritonitis, and the cavity with the accumulation of blood and pus was found entirely separate from the general peritoneal cavity. On examining the uterus I found, as you see here, surrounding the line of the uterine wound, an island of gangrenous tissue including the wound and a square inch or more to each side.

This gangrene explains the persistence of fever and sepsis, notwithstanding the evacuation and drainage.

The large inner tumor has, you see, a smooth surface. On the cut surface, in some parts, there was an appearance of myoma, in other places, islands of softer tissue looking like myxoma or sarcoma, and in other parts cystic cavities. These cysts have not the usual shape and appearance of cystomata, but are irregular, triangular, or longitudinal sinuses, the walls of which are not smooth but trabeculated, so as to give the appearance, as Dupuytren describes it, "similar to the walls of the ventricles of the heart."

I shall here make a few remarks on fibrocystomata of the uterus, because they are comparatively rare, the whole number described in the literature not being much above 100. Fibrocystomata are, as the name indicates, forms of fibromata or myomata, and it is a comparatively rare change in the preëxisting elements of these tumors that gives them the additional characteristics of cystomata.

We distinguish between the following varieties: myxomyoma, as described by Virchow, characterized by œdema of the interstitial tissue, and by the fluid in the spaces containing mucin; consequently it is something more than a simple œdema of the myoma. Spread islands of embryonal cells are also proof of a more active process, terminating in myxomatous or even sarcomatous tissue. Besides the œdema in the interstitial tissue of the myoma, we find œdema and atrophy of the muscular fibres, isolated fibres or their débris mixed with the fluid in the cavities. These cavities are of all sizes, from the microscopic, as shown on this slide, up to the size of a pin's head or walnut, and we even find cavities of enormous size, containing several quarts of fluid. The cavities are lined with pavement-celled epithelium, or rather endothelium, as you would expect, since they originate from dilated lymph spaces, or naked when the cavity is formed by the disintegration of muscular fibres. The cavities contain clear, colorless, or bloody fluid that often coagulates spontaneously when evacuated—a fact that Atlee pointed out as a differential diagnostic sign in contradistinction to the fluid from ovarian cystomata. A special form is described as fibromyoma lymphangiectodes, by Leopold. Distinctly different from this is the myoma teleangiectodes sive cavernosum of Virchow, with multiple cavities from the size of a millet-seed to that of a pea, communicating with the blood-vessels and consequently containing pure blood. These tumors are found to enlarge during menstruation (Virchow), and on auscultation a bruit is heard (Péan).

As to the place of development, the great majority are subperitoneal. Of the 70 cases gathered from the literature by Heer, 63 were subserous, 5 interstitial and only 2 submucous tumors. They

sometimes attain an enormous size, weighing 29, 40, and in one case even 81 lbs.

The cystofibromata are most often found between the ages of 30 and 50. The symptoms are in the main, of course, the same as those of common myomata and fibromata. Uterine hæmorrhage is rare because, as before mentioned, they rarely develop close to the mucous membrane. A more characteristic symptom is a sudden enlargement, probably from acute increase in the size of the cysts or from intracystic hæmorrhage. The spontaneous coagulation of the fluid would be a valuable symptom if it was constantly found, but in about seventy cases it was noted in only eleven (Heer). It might, however, in reality be more frequent, since in a number of cases it might not have been noticed (Gusserow). The lack of vitality shown by the tendency to local gangrene is also somewhat characteristic of these tumors. Thus Grammaticati, as stated by Gusserow, saw a myoma the size of a child's head, located in the wall of the cervix, undergo superficial necrosis, followed by sepsis and death.

It is rather noteworthy that a correct diagnosis was rarely made. They were almost always taken for ovarian cystomata, and a number of them were punctured. Puncture, however, in this form of cystoma, is far more dangerous than in other cystomata, as shown by Leopold, who found that, as a consequence of puncture, ten patients out of eleven died. McGuire, therefore, is right in asserting that exploratory laparotomy is less dangerous than puncture.

The treatment should be early extirpation, because of the probability of rapid enlargement, the danger of puncture, the liability to gangrenous or septic changes, and thrombosis of the vessels in and around the tumor. Gusserow gives a series of 41 laparotomies with 22 recoveries, the cause of the high mortality being the necessity of the removal of the uterus in some of the cases. Occasionally the operation cannot be finished; thus, according to Gusserow, in 38 cases, 7 were unfinished, and of the 7, 6 patients died. That an exact diagnosis, with a definite premeditated plan of operation, is of extreme importance, is shown by Gusserow, who, out of 11 cases described in the literature, reported 9 recoveries.

A few words about uterine sarcomata, inasmuch as the tumor here presented is a mixed form of cystofibroma and sarcoma. In the uterus we distinguish between circumscribed and diffused sarcomata, the former originating in the muscular wall of the uterus, the latter in the mucous membrane. The circumscribed uterine sarcomata are of the most interest to us in this connection, as they stand in near relationship to fibromyomata and fibrocystomata. They form, usually, round, circumscribed, harder or softer tumors, looking like, and developing in the same places as the fibromyomata, and so similar to these that we

must class the relapsing fibromata of Paget among the sarcomata. But besides more or less typical fibrous or muscular cells, here we find islands of short, spindle-shaped, round or polymorphous cells, or islands of myxoma tissue; in general, a more vivid cell-formation than in fibromata and myomata; and we further find in the same tumor in different places different forms of cells. So predominating, however, are fibroma or myoma tissue cells that Schröder regards it as a law that the circumscribed sarcomata are always formed by transformation of fibromata. According to Gusserow, the transformation of fibromata into the mixed form of fibrosarcomata, myxosarcomata, and cystosarcomata is so rare that the literature shows very few well-observed cases of this kind. By examining the microscopic slides that I exhibit to-night we find, in some portions, apparently typical myofibroma tissue, without or with dilated lymph spaces, in which we find granulated matter containing loose or isolated muscular cells; in other places, islands of typical myxoma tissue, here and there islands of embryonal cells; in another part of the tumor, territories of short, spindle-shaped cells, large and with oval or round nuclei; in other words, islands of unmistakable sarcoma tissue; and finally, places of common typical, round-celled sarcoma tissue.

As to the age in which fibrosarcomata of the uterus are found, there is this difference from the cystofibromata, that, while they both are most common between the ages of 30 and 50, the sarcomata are still common between 50 and 60, while the cystofibromata, as we have seen, stop at the age of 50.

As regards treatment, the sarcoma is a malignant tumor and needs more extensive removal or radical treatment than the benignant cystofibroma. The removal of subserous or interstitial fibrosarcomata by abdominal supra-vaginal extirpation and extraperitoneal treatment has often been followed by a growth of sarcomatous tissue in the cicatrix in the abdominal wall. The abdominal total extirpation of the uterus can hardly be said to have lost much of its dreadful mortality of about 70 per cent., from the time of Freund's first operation till now.

In the treatment of this case, the following suggestion occurred to me—a suggestion which was not carried out because of the patient's death. I should operate as I did, enucleating the subserous tumor, and if the uterine cavity was not opened, try intraperitoneal treatment of the stump. After recovery from this operation, if the microscopic examination of the tumor proved it to be a fibrosarcoma, I should follow, as soon as the patient's strength would permit, by vaginal extirpation. In the rare cases in which the size of a diagnosed circumscribed uterine sarcoma or fibrocystoma will permit of vaginal extirpation, this operation is, of course, the only one indicated.

The two other specimens are not strictly gynecological, as they occurred in men. However, they had this in common with gynecology, that laparotomy had to be done.

COLLOID CARCINOMA OF THE CÆCUM.

This specimen is a tumor of the cæcum, a so-called colloid carcinoma. The patient was a man of about forty, in whom, for about six months, an increasing tumor had developed in the middle of the abdominal cavity. When I saw him the tumor was of the size of the head of a child of four, was somewhat movable from side to side and up and down. There were never any disturbances from the side of the intestines, but emaciation and considerable pain. I thought it a tumor of the omentum on account of its mobility, also that it was malignant because it was hard, nodular, and of rapid growth, but I did not think of the intestine being the seat because there were no symptoms. When the abdominal cavity was opened I found this large nodulated tumor with a great many adhesions to the omentum and some to the intestines, and finally having separated these and applied a great many ligatures, when I got the tumor isolated and out through the abdominal wound, I found the ileum passing into one side of the tumor and the ascending colon coming out of the other side. I then divided the ileum and ascending colon two inches away from the tumor, detached and ligated the mesentery, and after the removal of the tumor closed the ileum and ascending colon in the usual way by invagination and suture, and made an anastomosis between the lower end of the ileum and upper end of the ascending colon by means of Semm's decalcified bone plates. The territory of approximation was covered by an undetached omental flap. I preferred this operation to circular resection or implantation of the ileum into the colon, because of the shortness of the plate operation as compared with the others. The patient lived four days, was able to take some liquid nourishment, had no vomiting, no tympanites, showed no symptoms of sepsis or peritonitis, but gradually became weaker and died. The autopsy showed no peritonitis, the ends of the upper and lower bowel were closed, as you see in this specimen, the closed ileum and closed end of the ascending colon, and at a distance of two and a half inches the anastomosis covered with the omental flap, which did not adhere. The peritoneal surfaces between the plates are perfectly united, allowing of no escape of liquid or air. The passage between the ileum and colon is perfectly free, as you see after opening the opposite wall of the intestines. The tumor shows at this point the ileum entering the large irregular cavity containing some liquid feces, slightly tinged with blood, and at the upper end of the cavity is the ascending colon. This enormously thickened wall of the cavity, one and a

half to two inches in thickness, is the carcinomatous intestinal wall, the cut surface presenting the characteristic gelatinous appearance of colloid carcinoma. This form of carcinoma has as its characteristics, in distinction from other carcinomas, colloid degeneration of the cells, causing them to enlarge, meet together, and form this transparent gelatinous substance. While we do not recognize a colloid carcinoma as distinctly different from carcinomas in general, as we know that partial colloid degeneration is common in all carcinomas of the intestinal tract; clinically, we recognize the extremes of this degeneration as a distinct form, characterized by its enormous size, and not uncommon in the stomach, large intestine, and peritoneum. In the peritoneal cavity there were no secondary tumors nor were the lymph glands of the mesentery invaded. This is what we should expect, as this colloid carcinoma is, as a rule, relatively benignant, with little tendency to the invasion of distant tissues or organs.

The death of the patient I ascribe to the fact that when the vitality has been lowered to a certain point by malignant tumors, without or with functional disturbances of vital organs, the organism loses its power to sustain more than a certain amount of operating, and death will follow from the yet unexplained exhaustion, in spite of the absence of all the common well-known fatal complications.

DOUBLE CARCINOMA OF THE COLON.

The third and last specimen is from a man between 40 and 50, who had suffered terribly from difficult passages from the bowels for a number of months. Finally a small, almost immovable tumor, appeared to the right of the umbilicus, and later on distention of the small intestines with pain and vomiting. Every half-hour or hour there would be a paroxysm of peristaltic contractions with excruciating pain. He finally asked to be relieved at any risk. On account of his extreme emaciation and weakened condition, I thought it out of the question to attempt extirpation, and resolved to try to relieve him by means of anastomoses between the intestine above and below the stricture. Laparotomy revealed the tumor to be a carcinoma of the ascending colon; consequently I united the lower part of the distended ileum with the empty transverse colon five to six inches away from the tumor. The patient did not get much relief and died ten days after the operation, growing gradually weaker, as in the other case. The autopsy showed no peritonitis, the omental flap was partially adherent to the intestine, the peritoneum between the plates united, but at the distal end of the plate, in the colon, an island of necrosis of the intestinal wall from pressure-atrophy caused by the plate. Thus in this case perforation of the intestine was only a question of a short time.

The carcinoma of the ascending colon, as the specimen shows, is three inches long and has caused almost complete occlusion of the bowel. The reason why no relief followed the operation was found below the anastomosis in the splenic flexure of the colon where a second carcinoma had developed, causing as you see, almost complete obstruction of the colon. This second carcinoma was not discovered during the operation, as it was hidden high up, under the spleen. The emptiness of the transverse colon, together with the rarity of a second carcinoma, was the cause of my not suspecting its presence. If it had been discovered, the anastomosis would have been made between the ileum and the sigmoid flexure of course. The mortality from even palliative operations upon the intestines is large, because, as a rule, the patients do not come to us for operation until they are exhausted by serious intestinal disturbances, usually of long continuance. This is so generally the case, that collapse, even after a short operation, is of frequent occurrence.

Senn's operation of intestinal anastomosis with the plates does not take any more time than the abdominal operation for artificial anus. The last operation here mentioned was of thirty-eight minutes' duration, from the time of the incision in the abdomen to the dressing of the abdominal wound.

DR. ETHERIDGE: I would like to ask Dr. Fenger if he thinks that, if he had drained the first case, he would have saved her from any gangrenous affection?

DR. FENGER: That is possible.

DR. ETHERIDGE: Why did you not do vaginal hysterectomy?

DR. FENGER: Because the tumor was too large.

DR. ETHERIDGE: If you had a similar case, would you not, after liberating the tumor through the abdomen, make a vaginal hysterectomy?

DR. FENGER: No; not at the same time, because I think that is dangerous—too much operating.

DR. ETHERIDGE: It seems to me that the combination of the two in an operation that, if not prolonged too much, increases the chances of the patient to live. You would have magnificent drainage that way.

DR. FENGER: Is not that a combination of abdominal and vaginal hysterectomy?

DR. ETHERIDGE: Well, cases get well after hysterectomy, even where the abdomen is opened?

DR. FENGER: That is Freund's operation.

DR. ETHERIDGE: Freund's and Schroeder's.

DR. FENGER: What is the difference; is it not the combination of laparotomy and vaginal hysterectomy that brings the mortality up above 60 per cent?

DR. ETHERIDGE: Have the two been done enough to make such a mortality as that; have

enough cases been recorded to say that there is a mortality of 60 per cent.

DR. FENGER: What is the difference between that and Freund's operation?

DR. ETHERIDGE: You have better drainage in Freund's operation.

DR. FENGER: From what I think now I would be afraid of that combination.

DR. ETHERIDGE: I have often thought if I should have a case of tumor of the uterus to remove and the adhesions were not enough in the pelvis to fix the cervix immovably, I should make the operation through the abdomen of removing the tumor, put an elastic ligature down as far as possible, then immediately remove the cervix by vaginal hysterectomy depending upon the forceps for control of the hæmorrhage. In that way we could get a magnificent drainage through the vagina.

DR. FENGER: Time would first have to show if such a combination as that would bring Freund's mortality down.

DR. ETHERIDGE: I believe a great many cases of fatal termination of supra-vaginal amputation of the uterus is from lack of drainage, and if after the amputation the balance can be taken out through the vagina, then we can close the abdomen and have the drainage through the vagina. Of course, that could not be done if there were universal adhesions through the pelvis.

DR. FENGER: Frank, of Cologne, who, criticised so much about his ten cases of enucleation, believed that he could peel off the uterus and leave the peritoneum. If that can be done in all cases, which I consider impossible, it can be done much more easily when there are adhesions all around the uterus. In fact, one of Czerny's first operations for uterine sarcoma was done in that way—vaginal enucleation without opening into the peritoneal cavity.

DR. EARLE: Suppose these operations had been successful, how long would they have prolonged the men's lives?

DR. FENGER: The man with double carcinoma would die in due course. In the other case—the colloid carcinoma—it is well known that these carcinomas belong to a comparatively benign type, and there is nothing against the possibility of a radical cure.

DR. NELSON: I wish to remind Dr. Fenger that he has not explained the cause of gangrene.

DR. FENGER: I will take into consideration first the way in which the wound surface is treated, namely, by a double row of sutures, deep and superficial. That is not enough to cause gangrene. Then comes the liability of these tumors in general to local death, and then comes sepsis. Sepsis plays an important part in the etiology of gangrene, and I do not doubt that sepsis in the collection of blood around the uterus was a main factor in this case.

DR. NELSON: Might there not be an explanation through the nervous system by the destruction of some important nerves?

DR. FENGER: The nervous system is far away. We know so little about gangrene by the destruction of the nerves that we are not able yet to take that up as a factor of much prominence. We hardly know of any gangrene from nervous destruction alone. The decubitus in paralytic patients is a mixture of traumatism and lack of innervation. The same may be said of the destruction of the joints in locomotor ataxy. There is always an element of injury, consequently something more than mere lack of innervation. In this case, I do not believe that the question of nerves would play any part.

DR. NELSON: Could there be a sufficient spasm of the muscular structure left behind to destroy the nutrition of the part?

DR. FENGER: Contractions can, as we know, sometimes make a fibroid die.

THE PRESIDENT: I intended to exhibit, for Dr. Wm. H. Byford, a uterine cysto-myoma possessing all the characteristics of the one just presented by Dr. Fenger, but found to-day that the specimen had been allowed to spoil. It was pedunculated, slightly adherent in places, trabeculated within, and quite full of collections of serum that coagulated upon exposure to the air. The patient was operated upon two weeks ago and is passing through a rapid and easy convalescence. The pedicle was treated extraperitoneally, and the abdominal cavity closed without drainage.

FOREIGN CORRESPONDENCE.

PROF. VON PETTENKOFER.

His views on Cholera and Typhoid Fever—On the Efficacy of Quarantine—On Yellow Fever.

There is no man in Europe to-day that stands as high in Sanitary Science as Prof. v. Pettenkofer. To him Munich owes its diminished mortality from typhoid fever. To him the world owes a vast amount of information concerning epidemics. And to him nations will owe a large immunity from zymotic disease should his views be accepted and put into practice. He is a determined non-believer in the personal contagious doctrine of cholera, typhoid and yellow fever. Hence he sees no practical utility in quarantine. Indeed he believes it to be detrimental in propagating false ideas and exciting needless alarm. His facts tend to explode any credence in the rôle played by drinking water. He sees in the soil and sewage the cause, and the cause only of epidemics. His opinions are backed by over forty years of intelligent study, and by collateral experiments and observations of others in the same line of inquiry.

I had occasion to visit the Hygienic Institute this morning in order to obtain from the Professor his views upon the following points:

1. The rôle played by microbes in the production of zymotic disease.
2. The efficiency of quarantine.
3. The best measures to prevent the spread of an epidemic.
4. Views on yellow fever.
5. Vaccination as a preventive.

To his answers, full, concise and convincing, I intend giving the widest circulation possible during the course of the next ten days, because it seems to me that the laity should be amply informed in all matters touching upon the public health. It is not then for this purpose that I now write, but to give briefly some more interesting sparks from a mind that is running over with brilliancy and full of scientific lore. In connection with the etiology of cholera, Prof. v. Pettenkofer took me to his chart-room, to illustrate the fluctuation in the course of typhoid fever in Dantzic and Munich, beginning in the year 1852, and affected by the improvements in the drinking water supply and in improved methods of sewerage. The charts covered rainfall, the amount of ground water, the actual death-rate and the relative death-rate. In the appropriate years were noted the introduction of the new reservoirs, as well as of the improvements in drainage. When the ground-water fell the mortality was larger. When it rose the death-rate was smaller. In 1852, in a population of 100,000, 350 died of typhoid fever. Then the people attacked the water. It was examined by experts and found to be perfectly pure. Würzburg, with a water-supply much less pure, had no typhoid fever. Yielding to public pressure, the city inaugurated a new water supply. The following year the death-rate fell. But the next year and in those following it reached its former formidable proportions. Then Pettenkofer agitated his drainage reforms—the cleaning of the earth, so to speak, and the proper disposal of refuse. Since this time the mortality has steadily diminished, until now the deaths from typhoid fever are extremely rare.

Certain soils tend to cleanse themselves rapidly, others require more time, and to utilize this point is one of the achievements of modern Sanitary Science. In Dantzic the conditions were the same as in Munich. A change of drinking water supply gave no better mortality, but when the whole system of drainage was changed for the better the death-rate at once diminished. These epidemics usually follow stagnant water courses, and wherever still, foul water exists zymotic disease will also obtain. Cholera only obtains in districts badly drained—meaning by this every condition of soil for which drainage was inaugurated. In New York, in 1852 (I think it was, the exact date has escaped me), the cholera

attacked only a part of Blackwell's Island and only a part of New York, and that was around the docks and lower part of the city. People visited the infected places; contracted the disease, and died with it in other precincts of the city, and yet no one else in these districts contracted cholera. In Munich during a distressing epidemic certain sections remained entirely healthy.

Dr. Cunningham, of Calcutta, is now passing through the press a large book, in which by a large amount of investigation extending over many years in India, as well as by experiments in the laboratory, he shows Pettenkofer's views to be the only correct ones, and gives the Professor, now covered with years and honors, credit for being the first scientist to place upon a proper footing the question of epidemics. Both of these gentlemen have no belief in quarantines. Their history at any time in the world's history, and whenever enforced, have never shown them to be productive of preventing the spread of an epidemic or of arresting its localized progress. America with a strict quarantine is scourged, while England with no quarantine escapes. The advance of any epidemic can only be arrested by improving the conditions upon which it depends for an existence, and history fails to record a single instance in which it has been stopped in any other way. At a time when Montevideo was suffering disastrously from yellow fever invasion a doctor in charge of the hospital there succeeded in quieting the people who had a superstitious dread of contagion that it *was not* personally contagious by taking his two young children with him each time that he made his visits to the fever wards.

I send this merely as an *avant courier*. A more elaborate expression of Dr. v. Pettenkofer's views will be published later.

HORATIO R. BIGELOW, M.D.

Munich, Oct. 4, 1888.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Hypnotism; its Therapeutic Uses—Therapeutic Value of Hypnotism.

There was an unusually interesting session recently of the Neurological Section of the Academy of Medicine, when the somewhat uncanny subject of hypnotism was dispassionately discussed in a purely scientific and rational manner. The principal paper of the evening was by Dr. C. A. Herter, on *The Therapeutic Uses of Hypnotism*. He said the employment of this agency was attended with considerable difficulty on account of the prejudice existing against it in the minds of the profession, as well as the public; and it was per-

haps impossible at the present time to arrive at any positive conclusions as to its proper place in medicine. Hypnosis resembled ordinary sleep, with the element of "suggestion" added. Suggestion was effective, however, in the waking state also, as shown in the so-called Christian Science and faith cure, as well as to some extent as regards homeopathy.

Dr. Herter adopted the classification of Lieboldt, who makes six divisions of hypnotic trance, according to the degree of its intensity, in contradistinction to that of Charcot into catalepsy, lethargy and somnambulism, and said that he did not think that Charcot's cases should be taken as a basis for conclusions because they were, as a rule, in trained subjects. He then described the proper method of inducing hypnosis, as advocated by Lieboldt and Bernheim. The operator should first secure the confidence of his patient, and then tell him to look him steadily in the eye and think of nothing but going to sleep. The process could be materially aided by suggestive remarks addressed to the patient and by placing two fingers upon the face; the fingers being finally pressed gently upon the eye-lids. In order to obtain good results it was necessary to watch the patient very closely, and to suit the words to the symptoms of sleep as they developed themselves. The *rationale* was very simple. Verbal suggestion in the waking state made the subject believe that he was falling asleep, and the method closely resembled the natural process.

Of the various conditions in which hypnotism has been employed therapeutically Dr. Herter first spoke of hysteria. More attention, he said had been given to its use in this connection than any other, but notwithstanding all that had been written upon it, the special indications for resorting to it are still far from clear. It was probable that hypnotic suggestion might be of more or less service in all forms of hysteria; but, as a rule, recovery, if secured, was not permanent. Its effect on hysterical amaurosis and amblyopia was extremely interesting, and in many cases a very marked improvement in vision had attended its persevering use. Of the motor paralysis none are more benefited by it than abductor paralysis of the larynx. In hysterical convulsions the number and novelty of the attacks were greatly diminished. No one, he thought, need ever be discouraged by failure to secure hypnosis at the first trial in any case of hysteria. The prospect of a cure would depend on various circumstances, but at all events hypnotism would in many instances serve as a useful adjunct to other treatment.

Not much was to be hoped from it in hysterio-epilepsy, and the same was true as regards ordinary epilepsy. In some cases of chorea he stated that the effect on the movements was rapid and marked, and with perseverance a cure might be

effected. A number of daily sittings was generally required, and in some cases it was necessary to keep them up for months. In any case of supposed cure, however, there would always arise the question whether the disease had not simply run its course and ended spontaneously. There was the most ground for hope in those cases in which the movements were general, and the previous existence of rheumatism and endocarditis did not seem to render the chances of relief less favorable. In insanity the results from hypnotism had not for the most part been satisfactory. He had seen it tried quite extensively at Zurich, but had never observed any benefit from it that was not evanescent. In delirium tremens its effect was often excellent, and quiet useful sleep was sometimes secured by it in cases in which the same result could only have been attained by the use of drugs in doses so large as to be dangerous. Alcoholism constitutes one of the most hopeful fields for its employment. The *séances* should be given twice daily for several months, and in many cases was said to become inspired with a complete disgust for drink. The opium, chloral, cocaine and tobacco habits could probably be also successfully treated in the same way; but in all these cases surveillance in an asylum was, of course, an indispensable feature of the treatment.

Masturbation and other bad habits, he continued, had been cured by hypnotism, and perhaps no more satisfactory results had ever been observed from its use than in incontinence of urine in children. Lieboldt had employed it in 77 cases, with a very large percentage of cures. The average age of the patients was 7 years, and in two of those cured there was incontinence of feces in addition to the enuresis. The results obtained were the more gratifying from the fact that many of the cases had resisted all the ordinary methods of treatment. In various rheumatic affections Bernheim and others had reported partly satisfactory results. In some chronic joint cases it was claimed that not only was the pain diminished, but that the nutrition of the joint was actually improved by the treatment. Dr. Herter thought it very doubtful, however, whether any real effect upon the joint was produced. In neuralgia much benefit could be expected in recent cases, but if the trouble was chronic there was less chance of success. Still, in some old cases of sciatica good results had been claimed, and at all events the method might often be of service in securing sleep, even if no permanent benefit could be looked for. In functional headaches it was of decided advantage, and in certain instances of migraine he had been successful in mitigating and cutting short the attacks by its aid.

At first sight it might seem that such an agency as this could have no effect upon a function like menstruation; but he said it had been practically demonstrated that in some cases not only the in-

terval between the periods, but the length of the periods themselves, could be absolutely controlled by it. The number of individuals in which such results could be looked for; however, was comparatively few. As to the employment of hypnotism in surgery as a substitute for the ordinary anæsthetics, the number of patients, with the exception perhaps of children, in whom it was available for major operations was no doubt small; especially as the anticipation of having an operation performed was extremely apt to interfere with the success of the hypnosis. On the whole, he thought its employment in this field was not to be recommended, except in cases where, for any reason, the use of anæsthetics was contraindicated. He had, however, seen a molar removed under its influence without the patient's suffering any pain or, indeed, having any remembrance afterward of the extraction of the tooth. In parturition Dr. Herter said that sufficient experience had now been accumulated to prove that hypnotism is in no wise prejudicial to efficient uterine contraction, and that it has no tendency to produce *post-partum* hæmorrhage or other bad results. At the same time he thought it was in no way comparable to chloroform in labor, and ought only to be used in those rare cases where the usual anæsthetics are contraindicated. In insomnia it could often be employed with good results, but it sometimes required months of persevering treatment to effect a cure. In cases where drugs had been resorted to it could be used in addition to the habitual remedy; the dose of the latter being gradually diminished, and perhaps finally replaced by a placebo.

Among the objections that had been raised against the employment of hypnotism he mentioned the following: 1. It tends, in certain susceptible subjects, to produce temporary mental alienation; some individuals thus developing hallucinations during wakefulness. 2. Some individuals fall asleep spontaneously; showing a tendency to auto-hypnotism. 3. Some can be readily put to sleep by any one who chooses to do so. Such bad results as these Dr. Herter thought could, for the most part, be entirely antagonized by suggestion.

In conclusion, he proposed the following general rules for those desiring to practice suggestive therapeutics:

1. Never hypnotize any subject without first obtaining his or her formal consent.
2. Always hypnotize in the presence of a third person.
3. Never give any suggestions other than those which are necessary for the patient's improvement in health.

Public exhibitions of hypnotism he believed should be prohibited by law, and the use of this agency confined exclusively to the medical profession. One advantage connected with its employment in medicine was that it does not lose its

effect by repetition. On the contrary, the subject becomes more and more readily influenced by it the oftener he tries it. From what had been said he thought it could be seen that suggestive therapeutics was not a delusion, and he said he had no doubt that before many years it would be assigned a regular position in medical service. At the conclusion of his paper Dr. Herter demonstrated on a female subject the method of inducing hypnosis.

The Chairman of the Section, Dr. W. R. Birdsell, next read the report of a case of violent tremor of the right forearm, which he believed to be of hysterical origin, although the patient was a young man, and which was successfully treated by hypnotic suggestion. In concluding it he said he thought we were not justified in wholly disregarding a method of treatment which had already shown itself useful in many nervous troubles; though, of course, he did not mean to contend that we should by any means attempt to treat all classes of cases by hypnotism, and thus place ourselves on a level with the faith healers and Christian science people.

Dr. Osgood Mason then read a paper based on six cases of hypnotic treatment, in which he gave his deductions as follows:

1. It is of decided value as a therapeutic agent.
2. Sleep is not always necessary for the production of the greatest benefit.
3. It has the effect of equalizing the circulation.
4. It also regulates and equalizes nervous action.

Corollary.—The equalization of the circulation is the result of the equalization of nervous action.

The last paper was one on *The Therapeutic Value of Hypnotism*, by Mr. Corey, of Boston, Chairman of the Committee on Hypnotism of the American Society for Psychical Research. In the course of it he spoke particularly of the results obtained by Mr. Voisin in certain cases of insanity. He also referred to many of the affections spoken of in Dr. Herter's paper, and expressed the opinion that hypnotism was destined to prove of great service in properly selected cases in medical practice. In the latter part of it he dwelt at some length upon the medico-legal aspect of the subject, and spoke of the danger that susceptible individuals might be caused by the unscrupulous to commit criminal acts while in a state of hypnotic trance.

In the discussion that followed Dr. Kremer, after relating some cases that he had had, stated that in one instance he had considerable difficulty in arousing the patient, while in several others he found that the treatment gave rise to headache and malaise. On the whole, he said, his experience with the method, which was confined to six or eight cases of a neurasthenic or hysterical character, had not been very favorable.

Dr. C. L. Dana referred to two or three cases, and then said that it was rather a curious coinci-

dence that just at the time when the convention of the "Christian Alliance," composed of those who believed in faith healing, was treating the subject of suggestive therapeutics empirically, it should be discussed at the Academy of Medicine from a rational point of view. He said that five or six years ago, when the method of Bray was in vogue, he had paid considerable attention to hypnotism, and he had known of one subject, a young girl of nervous temperament, who was affected with convulsions in consequence of the treatment. While the method of Bernheim and Lieboldt was much less objectionable, he did not think the practical application of hypnotism was of very wide range. There were comparatively few individuals who were suitable subjects for treatment by it, and there were not many physicians who were willing to devote the time necessarily required by it. Dr. Dana thought the so-called faith cure and Christian science should be prohibited by law, and expressed his opinion that it was better for a person to remain ill rather than to be cured by such agencies, because they tended to produce paresis of the will and eventually bring about a certain amount of volitional degradation.

Dr. Herter said, in reply to Dr. Kremer, that he had never found any difficulty in arousing a patient from the hypnotic sleep, although he had seen the method tried in over 100 subjects. The only exception was in an individual who had been in a spontaneous condition of trance previously. He did not think this a valid objection to hypnotism, and as to the headache and malaise referred to, he believed these could always be prevented by suggestion before allowing the patient to waken. He agreed with Dr. Dana as to the bad effects of Bray's method with the bright light, which had been known to give rise to epilepsy and convulsions; but said he was not aware of any evil results having been noted from the method now employed. He had never noticed any depressing tendency about the treatment, and, as far as his experience went, he believed it was comparatively easy to hypnotize quite a large proportion of individuals in the community.

P. B. P.

MISCELLANEOUS.

DIPHTHERIA SPREAD BY CATS.—Domestic animals have often not only been suspected but found guilty of spreading infection. In his report on the recent sustained prevalence of diphtheria in Enfield, Dr. Bruce Low of the medical department of the local government board incidentally states that during the continuance of the epidemic cats were observed to suffer in considerable numbers from illness, and in December, 1887, and in January, 1888, there was a large mortality among those animals, so much so that the attention of the dust contractor was directed to it. He stated that never in his previous experience had he seen so many dead cats in the

dust heaps. Some households seeing their cats ill, destroyed them. Though there were no known cases of diphtheria occurring in the practice of the veterinary surgeons at Eufield, yet they saw many cases of "influenza" at this time among animals. The following is an illustration of the possible connection between diphtheria in children and in cats: A little boy was taken ill with what turned out ultimately to be fatal diphtheria. On the first day of his illness, the cat, which was in the room at the time, licked the vomit on the floor. In a few days (the child meanwhile having died) the animal was noticed to be ill, and her sufferings being so severe and so similar to those of the dead boy the owner destroyed her. During the early part of its illness this cat had been let out nights in the back yard, as usual. A few days later the cat of a neighbor, who lived a few doors further off was noticed to be ill. It had also been out in the back yards at night. The second animal, which, however, recovered, was the pet and playfellow of four little girls, who, grieved at the illness of their favorite, nursed it with great care. All four girls developed diphtheria, the mother being convinced that they got it from the cat; and, indeed, no other known source of contact with infection could be discovered. It is easy to imagine cats catching infectious diseases like diphtheria when we remember how often milk and other unused food from the sick-room is given to the cat, or by some people thrown out in the back-yard for the benefit of their neighbors' cats if they have none of their own. It is a frequent occurrence to see children carrying cats in their arms, and even kissing them. It is obvious that if the cats were ill with diphtheria the children, under such circumstances, would almost inevitably contract the disease.—*London Sanitary Record*.

ACTIVITY OF THE SCARLET-FEVER POISON AFTER A YEAR.—Dr. J. Brook, Surgeon U. S. Army, of Fort Monroe, Va., communicates the following case: "A girl aged about eight, living at this place, was some months ago attacked by scarlet fever, the disease running a typical course. For a long time no possible source of contagion could be discovered. The child had not been absent from home, had been with no one lately exposed, and no other case was known to exist anywhere in the vicinity. Subsequently I learned that one of the house-servants had nursed a case of scarlet fever in a distant city just about a year before. After the case terminated she packed some of her things, including some clothing then worn, in a trunk, and left the place. A year later she had the trunk sent to her here, opened it, and took out the contents, the little girl being present and handling the things. Very soon after the latter was attacked, as stated.

"As fixing the period of incubation, it would be interesting to know precisely how many days passed from the time the trunk was opened until the disease appeared; but I was unable to determine that period satisfactorily."—*The Medical Record*.

INQUESTS OF DEATHS FROM PREVENTABLE DISEASES.—At the Paddington Vestry on Tuesday last a resolution was submitted from the Sanitary Committee, setting forth that several cases of death from preventable diseases having been reported to them under circumstances which suggest that the cause has been defective sanitary arrangements, and that the Committee is of opinion that in all such cases application should be made to the coroner to hold an inquest as to the cause of death, and recommending that a copy of the resolution be sent to all the vestries and district boards of the metropolis. It was further suggested that copies should be forwarded to the medical practitioners in their respective districts. Dr. Danford Thomas approved of holding an inquest where there was evidence of gross sanitary neglect.—*British Medical Journal*, Sept. 22, 1888.

DR. E. MILLER REID has recently been elected to the Chair of Physiology and Hygiene in the Baltimore University School of Medicine.

DR. F. R. CAMPBELL, a talented physician and writer of Buffalo, died of typhoid fever on September 14, at the early age of 28 years.

DR. HARVEY JEWETT, of Canandaigua, N. Y., died on September 4, aged 79 years.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from October 13, 1888, to October 19, 1888.

Capt. Edward T. Comegys, Asst. Surgeon, is relieved from duty at Madison Bks., New York, and will report in person to commanding officer, Ft. Bayard, N. M., for duty at that post, relieving First Lieut. William D. Dietz, Asst. Surgeon.

First Lieut. Dietz, on being relieved by Capt. Comegys, will report in person to commanding officer, Alcatraz Island, Cal., for duty at that post, reporting by letter to the commanding General Dept. of California. Par. 18, S. O. 240, A. G. O., Washington, October 15, 1888.

By direction of the Secretary of War, the following named officers of the Medical Department will report in person, on October 23, 1888, to the President of the Army Medical Examining Board, Army Building, New York City, for examination for promotion: Capt. John de B. W. Gardiner, Asst. Surgeon; Capt. William C. Gorgas, Asst. Surgeon; Capt. C. N. Berkeley Macauley, Asst. Surgeon; First Lieut. W. L. Kneidler, Asst. Surgeon; First Lieut. Edgar A. Mearns, Asst. Surgeon. Upon completion of their examination the officers named will rejoin their proper stations. Par. 1, S. O. 239, A. G. O., Washington, D. C., October 13, 1888.

Capt. Benjamin Munday, Asst. Surgeon, is relieved from duty at Jefferson Bks., Mo., and will report in person to the commanding officer, Ft. Sisseton, Dak., for duty at that post, relieving First Lieut. John L. Phillips, Asst. Surgeon, and reporting by letter to the commanding General, Dept. of Dakota. Par. 11, S. O. 242, A. G. O., Washington, October 17, 1888.

First Lieut. Phillips, on being relieved by Capt. Munday, will report in person to the commanding officer, Ft. Lyon, Col., for duty at that post, reporting by letter to the commanding General, Dept. of the Missouri. Par. 11, S. O. 242, A. G. O., Washington, October 17, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending October 20, 1888.

Surgeon A. F. Magruder, ordered to Marine Bks., Washington, D. C.

Asst. Surgeon E. P. Stone, detached from the "Richmond" and to the "Minnesota."

Asst. Surgeon J. F. Keeney, detached from the "Minnesota" and to the "Richmond."

Asst. Surgeon A. M. D. McCormick, detached from the Bureau Medicine and Surgery, and to the "Vermont."

Surgeon A. M. Moore, detached from naval station, New London, Conn., and to the "Kearsarge."

P. A. Surgeon A. A. Austin, ordered to naval station, New London, Conn.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending October 20, 1888.

P. A. Surgeon S. T. Armstrong, granted leave of absence for sixteen days. October 17, 1888.

Asst. Surgeon R. M. Woodward, when relieved at Marine Hospital, Boston, Mass., to proceed to Marine Hospital, Chicago, Ill., for duty. October 12, 1888. Granted leave of absence for thirty days. October 17, 1888.

Asst. Surgeon A. W. Condict, relieved from duty at Marine Hospital, Chicago, Ill.; ordered to Marine Hospital, Boston, Mass. October 12, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, NOVEMBER 3, 1888.

No. 18.

ORIGINAL ARTICLES.

THE SCHOOLROOM A FACTOR IN THE PRODUCTION OF DISEASE.

Read in the Section on State Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY J. A. LARRABEE, M.D.,
OF LOUISVILLE, KY.

This is the first time in the period of my membership in the Association that I have had the honor to appear before your Section. I am satisfied that this affliction has been put upon you by mistake in making up the schedule for the last year. Most of my time is spent in the Section of Pediatrics. It may be truly said that any doctor who has practiced his profession for a score of years has in that time become a true philanthropist. That he will always be found to take the greatest interest in whatever concerns the welfare of the human race. Obedient, therefore, to your call, with the desire expressed, I have hastily prepared a few words upon a subject with which I am brought into daily contact. A subject which not only concerns the present, but also the future health of children.

It is a fair general estimate that one-third of the lifetime of every educated person is passed in the schoolroom. It follows, therefore, that the location, construction and surroundings are all matters of importance. It is gratifying to know that a great advance has been made in cities in these particulars. If, however, education means the development as well as the training of the mind, there is still much to be desired. Every schoolhouse should be located with a view to the free admission of sunlight and fresh air. In Switzerland the summits of small hills are selected as the proper location. The building should be made attractive to the eye in every possible manner. Ocular impressions are powerful educators. Manufacturing corporations in our eastern cities and villages appreciate this as bearing not only upon the physical health, but also the happiness and contentment of their operatives. The immense cotton factories which one sees in New England present the appearance of palaces, surrounded as they are by parks, lawns; with fountains and rare and beautiful flowers. I have

been told that the proprietors are abundantly repaid for this great outlay of money in the moral and physical welfare of their tenants. But the operatives in mills and workshops ought not to be compared with children. Men and women can withstand the effects of vitiated air and unhealthy surroundings for years without serious danger to their health. The susceptibility to disease from such causes is in inverse proportion to the age of the individual. The inside of the schoolroom should also be made attractive. Instead of blank walls there should be paintings, historical and instructive. Pictures are wonderful educators.

Ventilation, although universally acknowledged to be of the utmost importance in maintenance of health, is still very faulty. The hot-house plan prevails. The fault is not so much with the teachers as with the home. Children reared in stove or furnace heated homes are chilled at a temperature of 66° F. in the schoolroom. This temperature is quite sufficient if begun in the autumnal commencement and kept up all winter. The desire for more heat arises from over-exhaustion and depletion by brain-forcing study, or want of proper exercise in the open air. The cubic space of air to each scholar varies in our schoolrooms from 200 to 300 feet. Prof. Kedzie fixes 300 as the maximum limit for health. This would necessitate an entire change of air about every fifteen minutes to prevent re-breathing. An ordinary schoolroom would require 175,000 cubic feet of air per hour. There can be no doubt that this amount of fresh air is needed. How to obtain such ventilation without exposure to draughts must be a perplexing question to every teacher.

The top and bottom protection slide, or better, the middle-joint sash ventilator ought to be enforced. The science of respiration has demonstrated that the largest amount of carbonic acid compatible with life is 7 parts in 10,000. These estimates are made in mines, where the dimly-burning candle and the miner's lamp are extinguished. When, however, the carbon dioxide present is due to overcrowding a much smaller amount becomes oppressive. In closed churches and theatres a drowsy audience is not always the fault of preacher or actor.

The schoolroom is a propaganda of contagion. The opening of schools in the autumn is the sig-

nal for the outbreak of contagious diseases rekindled from the still smoking embers of the last year's epidemic. There is no remedy, save in the formulation of discreet rules and their rigid enforcement by the authorities. Children come to the schoolroom from every sort of home, the unclean and the clean. Those wearing soiled clothing mingle with the neat and tidy. No schoolroom should have an odor, and no teacher should be employed whose olfactories are at all blunted. There is a prison smell, a hospital odor, a lying-in odor, etc., and there is a school odor, and wherever these exist there is disease and death. Right here is the place to begin the practical instruction in hygiene. Impressions made upon the growing mind are lasting for good or evil. It is very hard to convince people of the necessity of caring for their bodies after they have formed habits of uncleanness. This is the reason that we meet with so much opposition in enforced sanitation. We shall never accomplish much in public hygiene until we commence with the school room. Wash-rooms, clothes-rooms, shoe-rooms, are necessary attachments to every schoolroom.

School Headache.—This is one of the most common complaints among pupils. The cephalalgia is frontal—often supra-orbital. There is always a slight elevation of temperature—and anorexia. Oculists have written upon the frequency of such headaches, and attribute the attacks to overstrain of the eyes. As a result we see boys and girls below their teens *wearing glasses*. Such cases are very common in my practice and I have almost invariably found them due to constipation, which may be attributed to sitting, but more especially to inattention to the calls of nature. The evacuation of the cæcum depends very much upon the contraction of the neighboring muscles, the psoas and iliacus, as in walking. School constipation is of this character, and is not unfrequently attended by typhlitis and circumscribed peritonitis. Females are proverbially prone to constipation with acid eructations. In more advanced schools, colleges and seminaries neglect of the bowels causes at least two-thirds of all illness. The most apparent sequence is a gradual poisoning of the system by retained excrementitious matters constituting a condition properly called stercoræmia. The subjects of such blood poisoning present a sallow anæmic appearance with a languor marked in every movement. But the consequences of school constipation, besides producing headache and lassitude, fall elsewhere with the female. The frequency of uterine displacements in virgins is recognized by gynecologists. We instinctively shrink from the treatment of such conditions, while there is every reason to believe they exist and that their existence is largely due to retention of urine and feces beyond a reasonable limit. We live in a day of specialism, and the demand is for more. Eye doctors, nerve doctors, pile doc-

tors, and womb doctors, draw their patrons most largely from the schoolroom. Grandmothers peer curiously over their spectacles when informed that their granddaughters are subjects of diseases which only married women are supposed to have and seldom had in their day.

Eye Troubles.—The frequency of hypermetropia and astigmatism is not only noteworthy among pupils of our public schools, but also myopia, due to prolonged study. The statement that nine-tenths of all cases of myopia originate from the schoolroom is startling. This defect is practically unknown among the uneducated. It is in consequence of overstrain. The deformity once acquired is permanent and renders the subject unfit for many of the duties of life. Oculists, I believe, consider the disease progressive in character, originating in childhood, never after the age 20 years. Ribot says the number of short-sighted persons must necessarily increase in any nation devoted to intellectual pursuits. Germans are proverbially near-sighted. Dr. Loring, in a paper upon this subject, makes the statement that 62 per cent. of the public school pupils in Germany are short-sighted. A faulty construction of the windows in regard to the admission of light may cause a preponderance of such cases to obtain in a certain school. It is probable that this deformity may become inherited.

Consequences of Overstrain not the same in both Sexes.—So long as sexual differences remain unappreciated, girls participating in rude, boyish sports, school study and restriction may be considered to affect the sexes equally. This period of life, always too brief, is much shorter in cities than in the country—a circumstance largely due to that oft' forgotten but nevertheless potent educator, the "street school." The period of more active growth and development corresponds to the age at which the most arduous tasks are required of the mental faculties. The physical perfection of woman demands at this period plenty of exercise in the open air and free supply of blood to the pelvic viscera. Instead, however, the blood is used to supply the brain, and the generative organs suffer. The inexorable laws of society demand an early finish to the education at any cost. The latter is acceded to, and the consequence falls like a withering blight upon the tenderest buds of our hope and promise. There are few, if any, female schools where there is any relaxation of discipline or study on account of the occurrence of menstruation—and this despite the knowledge that mental application at this time results in hysteria, and often in mental aberration, or the complete arrest of the menstrual function. Here, indeed, is the axe laid at the root of the tree, and the foundation broad and deep for future invalidism and the work of the gynecologist. Another phase of this question is already attracting the attention of thinking

men in the medical profession; a question assuming National importance; it is the sterility of highly-educated women, who, when girls in their teens, have been subjected to the ordeal of collegiate examinations. It has also been observed that of those who conceive, the mortality in child-bearing is exceedingly high. We are rapidly losing our National identity. It has been estimated that the State of Massachusetts will soon become depopulated of American children, notwithstanding her 70,000 old maids. Dr. Moore, following the inductive reasoning of Herbert Spencer, makes the statement that "America must in future look to Europe for her mothers." Sociologists and biologists have shown that motherhood decreases with high intellectual cultivation.

Just here I am constrained to say something in regard to the fault in our educational system itself. Children are taught more and know less than in our grandfathers' days. Book knowledge is overestimated and practical reasoning undervalued—a fault which extends to our colleges and medical schools. A blind allegiance to the so-called authorities leads to effeminacy of thought and destroys individuality. The failure of our brightest collegiate graduates to obtain lucrative employment is certainly suggestive of a want of practical education. The constant struggle in the various school grades is to pass rather than to know, and, as Huxley puts it, "outraged nature takes her revenge," they do pass and they don't know. The credulity of many educated people, and the readiness with which they seize upon the most palpable frauds, is a sad comment upon our schools of philosophy. A few years ago it was spiritualism, then blue glass, and now Christian science. Think of a young mother and her infant perishing from causes which even a trained nurse or a midwife could have easily prevented. She was a woman of culture and died a martyr to Christian Science, a sect to which she and her husband belonged. Facts which have been recognized from the beginning of science are isolated and built into sects. How long will it be before we shall resort to songs and incantations for the restoration of the sick, as did the ancient Greeks?

Chorea (St. Vitus' Dance).—Chorea, with all its train of consequences upon the growing brain and nervous system, is among the diseases produced by overstrain in the school-room. A discussion of the relation between chorea and rheumatism would not be germane to the subject under consideration.¹ In a former paper I have attempted to show that the exhausted nutrition of growth, plus brain, work produces both, and also that the two diseases are controvertible, if not indeed identical. Here, as elsewhere, overstrain is not equal in consequences upon the sexes. Girls

are more prone to chorea. When my clinic for diseases of children was held in the fall and winter months, cases of chorea were only occasional luxuries for a lecture subject. Since, however, this clinic has been made to include the spring and summer months, there is rarely a lecture day without a new case of St. Vitus' dance. Nine cases typical of the disease were present at the dispensary in a single week; of these seven were girls and two boys. All were pupils in public schools and were bright and ambitious scholars, who shed tears when told that the treatment would include a complete cessation of school work. Besides these, I select from my notes of private practice a few cases to illustrate the cause.

L. G., a bright girl of 13, growing rapidly, attacked during Christmas week. The involuntary movements, at first unilateral, rapidly involved the whole body, causing her to fall. Studies in school were history, geography and spelling to memorize, reading with definitions, arithmetic mental, arithmetic practical, drawing, grammar, music and composition. Time of study in school-room, including recitations, five and one-half hours, necessitating three hours' hard study at home every night excepting Sunday. She was at the head of her class, and talked in her sleep of her studies.

A. H., æt. 17. Chorea severe, general, but more marked on left side. Hardly able to carry her books to and from school. Same grade in different school. To these, from the same school, could be added four others ranging from 12 to 16 years of age. Three of these developed cardiac lesion, one died of peri- and endocarditis, and while the subject of chorea developed polyarthritis.

The difference between voluntary and forced learning is the difference between mental strength and mental debility. All of these children will be intellectually as well as physically weakened by the nerve-storm through which they have passed. The difference between partaking of food when we have an appetite and crowding it into a stomach already satiated is dyspepsia. There is a mental as well as a physical dyspepsia, and these over-taught school-children are the victims. The power of concentration of thought is feeble in the child. "The child's will is the wind's will," says Longfellow—and we see in this a wise provision of nature, as beneficial to the growing brain as is motion to the limbs.

The physiological law is that any work in excess of the power of the system adds nothing whatever to the desired result. If a child's capacity to learn is exhausted in two hours, there will be no gain by studying five hours. It has been ascertained that the longest period of thought that can be concentrated upon a single proposition with advantage is fifteen minutes. The astonishing progress made by pupils in our night schools has been a matter of comment among teachers.

¹ "Acute Rheumatism of Childhood," Kentucky State Medical Society, 1879.

Can it be that the flickering gas or lamplight, and the depressing influence of night, are found conducive to learning? Certainly not. But the importance of a suitable admixture of physical labor is so great that even these serious objections are overcome. England has a system by which 100,000 children are able to get from two and a half to three hours' schooling in the twenty-four. This is known as the "half time law," and it has been found that such scholars compare favorably in attainment with those who attend the regular all day sessions.

Consumption Favored by School Discipline.—There is no point better settled in pulmonary therapeutics than the necessity of development of the apices of the lungs. Whatever of truth, if any, shall be found to attach to Koch's microbes, the fact remains that consumption may be prevented by expansion of the top of the lungs, that this is always the favorite seat of tubercular deposits, and that, conversely, whatever tends to lessen the capacity of the apex tends to produce the disease.

The position of the growing child bending or stooping over a desk in school for six hours a day effectually prevents such development. Shoemakers, bookkeepers and tailors are found more than other trades in the consumptive ranks, and it is in the main due to this cause. The respiration becomes insensibly more and more shallow. In the child the shoulders are approximated more readily, and the lung actually folded in upon itself.

This matter of the expulsion of the residual air in the lungs is a too much neglected point in therapeutics. The introduction of vocal music in our common schools will result in great good. Dr. Rush declares that the German people are largely indebted for their exemption from pulmonary consumption to the strength and volume which their lungs acquire in the practice of vocal music. It would be well if, at the end of each study hour, classes were obliged to stand and sing while fresh air is being admitted to the room.

In conclusion, Mr. Chairman, let me say that the evils of the school-room are not primarily the fault of the teachers, who are always overworked and always underpaid. The fault is in the people and the needed reform must commence with the people. A complaint was made a few years ago that shoemakers were ruining women's feet by making high-heeled and contracted shoes, to which complaint the craft very aptly replied, "We would not make them so if they were not demanded." Let the public demand instruction in natural laws, mental and moral philosophy, and hygiene. Let the old Greek apothegm be hung at the entrance of our institutions of learning. Physiology and hygiene should be taught in all schools and all grades. At present, if at all studied, it is reserved for high schools and colleges, where it is usually finished in a few weeks. Cæsar said to the soothsayer, "What concerns our-

selves must be last," and the sentiment cost him his life. It has cost many lives since.

It is as important to know that bile ducts open into the intestines as it is to know that the Lena River flows into the Arctic Ocean. It is as important for a girl to know how long it takes beef-steak, pickles and slate pencils to digest in a stomach as it is to know how long it takes the light of one of the fixed stars to reach our planet. Let the course of study be made different for the sexes. Lectures in domestic economy might be substituted for political economy, so that when the *ultima thule* of their ambition shall be reached they may reign queen of the household and remain queen of hearts. How many physical and mental wrecks, which now lie at the very threshold of manhood and womanhood, might be prevented by proper instruction. Children are educated more on their way to and from the school-room than they are within its walls, and this kind of education usually sticks, because it is obtained from observation. The first evasive answer to the question of the origin of themselves is the first false step in the child's future career. His innocent questioning of natural laws is silenced with such an emphasis as to awaken a latent curiosity. Is it any wonder that he should take his question to the great street school, with its vulgar jest for an answer? And is it a wonder that he should regard his teacher in the alley as a superior oracle whom he will consult on future occasions when such questions arise? Let us have such a blending of the physical with the mental development that brain work will not tire. Then the school-house will be the promoter of health rather than disease. There is no reason why study should not strengthen the mind as well as that the steady blows of the blacksmith strengthen his arm, if properly conducted. Then, and then only, may we hope to see more of that exceptional attainment, a sound mind in a sound body.

DR. LINDSLEY, of Tennessee: I have listened attentively to this paper, and with much interest. Since 1855 I have been connected with the Board of Education of my State, and have visited school-rooms all over the United States, talking with the superintendents and professors. The subject of Professor Larrabee's paper is of paramount importance, relating as it does to the millions of children attending our schools. There are two important points which occur to me in connection with it: 1. Medical men must arouse public attention to the necessity for paid medical inspectors. 2. I would put no text-books of hygiene in the schools, because the masses do not get this education. The majority of children leave the schools before reaching the higher classes where this subject is taught. Hygiene should be impressed upon them by every feature of their environment.

DR. HIBBERD, of Indiana: I agree with Dr.

Lindsley in the utter impossibility of teaching children in primary schools enough physiology to be of utility. There are many who are grandfathers who do not know what it is absolutely necessary to teach. Teach youth to observe, and what things they should observe. The trustees of schools understand the necessity for air, light, etc., but they cannot get the money to provide them. Every school-house in the land should be situated so as to face the best direction of the compass, having air and light in abundance, but it will cost a great deal of money.

We must recognize that all children are not exactly alike in their capacity for receiving education; and the present methods are faulty in teaching all children on the same plan. Due regard must be paid to mental and physical variations, and sound minds and bodies cannot be had until this is recognized.

DR. HAMILTON, U. S. Marine Hospital Service: The question of eyesight in school-children is one of particular interest to me, and foreign journals have devoted a great deal of space to the consideration of this question during the past year. Dr. Larrabee referred to the majority of German children being myopic; I think this is due to the employment of the old black letter. German medical text-books are printed in Roman letters; but for political reasons the black letters are generally used. I certainly agree in the necessity for school inspectors; and the first thing they should do would be to examine the text-books, the paper of which is often inferior, and the printing but little better. Another feature demanding improvement is the sitting arrangement of a school-room. We all know the country school-room with its four rows of desks, and windows on either side of the room, which imperfectly light the middle rows of desks.

DR. VAUGHAN, of Michigan: While I agree with the paper, I do not believe that all defects in eyesight in school-children are attributable to the school-room. If you enter any family room at night, the father and mother will be found sitting on either side of a table on which the light is, and the children are allowed to sit anywhere. I believe more harm is done our young girls by sitting up late at night at parties and dances, than by all the alleged confinement in the school-room. Dr. Larrabee did not refer to the stairs, which are usually selected as one of the fertile sources of disease in young girls; but if you watch a woman go upstairs, she does it with her body bent forward and swinging from side to side, instead of going upstairs erect. I believe the German method of the climbing cure might be employed advantageously in some of these cases.

I am not prepared to state how it is in other States, but in Michigan most children are better situated at the school-house than at home. Farm houses, as a rule, are far from being good sanitary

types. I do not believe that any necessary money would be withheld to secure first-class schools. The ignorance of teachers on hygienic matters seems to me to be the primary evil.

DR. HIBBERD, of Indiana: I wish to complete an omission in my remarks. I believe with Dr. Vaughan that the fundamental education should be with the teacher. But the architect must also be remembered. This gentleman usually puts his efforts on the adornment of the exterior of the building, and the interior is suited to this. We cannot get architects to give sufficient attention to the interior of these buildings, because it is their aim to produce handsome work.

DR. LINDSLEY, of Tennessee: I should like to ask Dr. Vaughan if the State Board of Health of Michigan has not acted as inspector of schools; and if its creation has not permeated the school system with its influence?

DR. VAUGHAN: The plans for school buildings must be approved by the State Board of Health.

CATARACT EXTRACTIONS, WITH ONLY THE EYE OPERATED UPON CLOSED BY ADHESIVE STRIPS.

THE OTHER EYE LEFT OPEN FOR THE GUIDANCE OF THE PATIENT.

Read in the Section on Ophthalmology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY JULIAN J. CHISOLM, M.D.,

PROFESSOR OF EYE AND EAR SURGERY IN THE UNIVERSITY OF MARYLAND, AND SURGEON-IN-CHIEF OF THE PRESBYTERIAN EYE AND EAR CHARITY HOSPITAL OF BALTIMORE CITY.

At the last meeting of the American Medical Association, June, 1887, I read a paper on the advantages of the isinglass plasters as the only lid dressing after cataract extractions, and the keeping of patients in moderately lighted rooms instead of the dark ones. I also stated that for some weeks I had made bold to leave one eye open for the guidance of the patient during the entire after-treatment. That this method of after-treatment would add immensely to the comfort of the patient, was evident to all; the only question was as to its safety, for the great results to be finally secured. Since that time, another year has passed, and with the twelve months' experience added, much more confidence can be expressed in the advantages of the method, revolutionary as it seems.

In my "Hospital Cataract Case-Book," every case of cataract extraction is entered. With the pure and simple senile cataracts in healthy patients, are put those of traumatic or inflammatory origin with iritic, choroidal and glaucomatous complications; all appear. Heretofore, in making up my reports and in tabulating the amount of vision secured to patients, a cataract extraction that was in every way a perfect success, the after-treatment having been accompanied

by no inflammation whatever, leaving the patient with a clear cornea and good pupil, was counted a failure because of nerve atrophy or extensive central choroidal or retinal changes, now rendered clearly visible by ophthalmoscopic examination through a transparent vitreous. As in the percentage of no restoration to sight these cases unjustly appear as failures in the general summing up after cataract extractions. In the list which I now present I will put only those of uncomplicated cataracts, so that proper comparison may be made between the methods of light afterdressings and treatment in light rooms which I strongly recommend, and the heavy dressings and dark rooms which others use.

In this list, culled from my case-book for the year ending May 1, 1888, I find seventy-four cataract extractions, dressed by a single strip of adhesive plaster over the eye operated upon only, the other eye being left open. Of these eyes so simply dressed none were lost. There was not a single case of corneal sloughing. In every case the cornea was clear, and in only two cases were the pupils closed by iritic adhesions, rendering an iridectomy in the future needful for the restoration of vision. In all of these cases the biniodide of mercury solution was freely used as an antiseptic during all steps of the operation.

My successful cases are not all V. $\frac{2}{3}$. Many of my hospital patients are drawn from distant regions, poor parts of the Southern country, and have not the means to pay for a second visit to Baltimore to have the secondary operation performed for the removal of capsular thickenings. We all know that these capsulotomies must enter largely into advancing cataract patients to the higher degrees of vision. Most of my cases are farmers from the States of Virginia, North Carolina, and Maryland. If they can see to read ordinary print and attend to their farm duties it is all that they desire. The improvement is so immense upon the no seeing with matured cataract, that they are perfectly satisfied with the results as secured by a primary operation. In their anxiety to get home as soon as the eyes become strong enough to stand ordinary light, I cannot retain them over a fortnight under observation. At this stage of progress after cataract extraction, vision, as we all know, is by no means the best. I again state, that if my cases when I dismiss them, at the end of two weeks never to see the majority of them more, must be accepted on the status of V. $\frac{2}{3}$, I will contrast unfavorably with the operators in the largest cities, whose cases may frequently return to them for examination and after-treatment for many months, until time, secondary operations, the careful adjustment of lenses, with the correction of such astigmatism as remains after the operations, will put their eyes in the best condition to exhibit the high degrees of excellence which cataract operations will finally bring about.

The point which I desire to make, is this, in answer to the following question: Is the exposure of one eye, and the light dressing of the other eye by a piece of adhesive strap, after cataract extraction, conducive to inflammation? My experience answers very positively, that it does not. It matters not what our preconceived notions are. It is so easy to theorize as to the necessity of adjusting compresses for the support of the whole cornea, so that all parts will be equally pressed upon. That absolute rest of the eyes is required for the healing process to be perfected. That the movements of one eye will necessarily cause the closed one to move to like extent, and that this frictioning of the wounded cornea against the lid must bring on inflammation. These opinions may be very satisfactory to those who always close up both eyes, and put their patients to bed, where they are kept on their backs for days in the dark. But if they will adopt the method which I use of closing up one eye properly, with a piece of isinglass plaster, that eye is as absolutely safe against all jarring as if a cut finger were dressed in similar manner. By this method, which in no way can disturb the nice relations which the eye ball and lids have always sustained to each other, there is nothing to friction injuriously against, even when the eye does move in its relations with the exposed one.

If an ophthalmic surgeon in his hospital work will try the methods honestly in an equal number of simple senile cataracts, his personal experience will soon show him the advantage of this simple treatment. Let him take a number of cataracts, as they may come in from week to week for surgical treatment, each alternate one to be operated upon in his bed, with both eyes closed by compresses and bandages, and kept absolutely quiet in a dark room with all the restraints that are usually imposed. Again, let each alternate one be operated upon in front of a large window, upon a convenient operating table, then close the eye properly with a piece of isinglass plaster one and one-half inches long and one inch wide, see that it is so thoroughly adjusted that the lids are made into one piece as it were, for the perfect support of the divided cornea. Leave the canthi free from the covering to permit of the escape of secretions, and for the introduction of drops by capillary action, if they be needed, without disturbing the adhesive dressing. When the plaster is dry and the lids closed let him get off from the table and walk to his moderately lighted room, guided by the eye which has been left open. When there, let him follow his own inclination to lie on the bed or sit in a chair. He will undress himself at bedtime and dress himself in the morning, eating his regular meals, and enjoying the sight as well as the conversation with friends. Then remove the strap from the one, and the badge from the other simultaneously. If

the cases have been operated upon with equal care antiseptically, the operation being in all cases equally smooth, the surgeon will find himself at the end of two weeks with twenty cases of cataract extraction equally free from inflammatory complications, and that is all that the most anxious operator can wish for.

During the week of treatment, at the daily visits, the surgeon must have noted the cheerfulness of the patient who had one eye opened and who had enjoyed the pleasant companionship of friends, when contrasted with the gloomy doubts and the shaken faith of the blind-folded one, who could not help inquiring how long he must endure this darkness. We will say nothing of the lighted candle which was brought in by the nurse to keep the surgeon from colliding with the table or other bed-room furniture. Then contrast the condition of the eyes at the time the strap and the bandage are removed. The one in the lighted room looks at you and you at him, as you have done daily. You have seen the adhesive strap day by day free from secretions and retaining its adjustment. You now see the newly exposed eye singularly devoid of redness and of weeping. It stands the light wonderfully for one so long closed, because the one always opened has preserved the closed one from the acquired sensitiveness engendered by darkness. As the candle is brought for the inspection of the eye released from the dark bandage, the injection and weeping, incumbent on the exposure after the week of night, do not surprise us, for we are accustomed to see it in every case thus treated.

Follow the two classes of cases up to the end of the two weeks, to the day of dismissal. The one treated by the bandage has never been for a moment without the protection of dark smoked glasses, and cannot go for a moment without them. The one treated by the adhesive strap with one eye opened had never had the smoked glasses on, and has never felt the want of them. One cannot bear the light, the other is not aware of its presence, and only puts on smoked glasses as he goes out on the street because he is told to put them on.

In the March number of the *Archives of Ophthalmology*, 1888, Dr. Oliver Belt, my resident physician at the Presbyterian Eye and Ear Charity Hospital of Baltimore City, has published a paper written some months since, on the result of one hundred cases of cataract extraction treated by the isinglass plaster, in light rooms and without restraint. Some, the earlier cases, with the closure of both eyes, and the last half of the series with one eye alone closed. These were taken as they appear in the case-book of the hospital, and as he very properly says, some of them with glaucoma, nerve atrophy, and other fundus complications. In his table it is seen that eighty-three of the one hundred had good vision,

seven had improved sight; in five there was no improvement from causes, fundus troubles easily appreciable after the cataract was extracted, and five were failures. Among the five failures one was from purulent contagion, panophthalmitis, a misfortune or accident that would have occurred under any kind of after-treatment. The second was in an old feeble man of 91 years of age, who was willing to take the risk in his desire to see. The third patient left the hospital for her city home seeing well. In getting from the street car to her house door she was caught in a summer shower, and from wet clothing and exposure the eye took on inflammation and was lost. Most surgeons would have ignored this accident, as she was dismissed from the hospital with good sight. I counted it as a loss for final success. Two alone remain as inflammatory complications, belonging to the operation of cataract extraction, and the treatment, a loss of 2 per cent.

In the same volume of the *Archives of Ophthalmology*, for March, 1888, Dr. H. Knapp reports a series of cataract extractions without iridectomy. He states how carefully he has used antiseptic precautions, avoiding all unnecessary movements, as tending in his opinion to the displacement of the iris, and how he has bandaged with care both eyes. He contrasts his method of dressing with the simpler method. Thinks Chisolm has gone too far in simplifying the after-treatment of cataract extractions, and then compares the final results in his carefully selected series of simple senile cataract extractions with the table from Dr. Belt's report of my hospital work, in which complicated as well as simple cases are mingled together. He closes this part of his paper with this statement: "The superiority of Dr. Chisolm's bandage is not borne out by his statistics. Five per cent. of loss and 5 per cent of no vision, is below the average success of experienced and skilled operators to the front rank of whom we all know Dr. Chisolm belongs." This is an unfair contrast, the more especially as Dr. Belt has explained in his paper how these cases were failures in seeing, even when no inflammatory complications had arisen during the after-treatment of the cases; and how an ophthalmoscopic examination showed glaucoma, nerve atrophy, or central choroidal patches. If the operation of cataract extraction, even in these cases, had not been in every way successful how could the ophthalmoscopic investigation have been afterwards made. Sight was not restored, but that was not the consequence of an unsuccessful cataract extraction.

I here repeat what I had mentioned in the beginning of this paper, viz: that from May 1, 1887, to May 1, 1888, I had made seventy-four simple uncomplicated cataract extractions under the simple dressing of one eye closed with an adhesive strip, keeping the patient in a lighted room, and avoiding all restraint in his move-

ments and in his surroundings. Of these cases I have not lost a single eye. In only two did inflammatory closure of the pupil occur, which will require a secondary operation for the restoration of vision.

I have now had two years' experience in this simple dressing of eyes after cataract extraction. For the past year I have left one eye open in all cases. I have not used dark rooms. I have not operated on the patient in bed, but always in the operating room, before a large window, and upon a firm narrow table. In every case the patient has walked from the operating room to his chamber, guided by the eye left open when it possessed vision enough. In no case was the patient put to bed unless he desired it, and every freedom of movement was permitted. In no individual case have I seen any trouble that I had not met with before, when I was in the habit of using careful bandaging, dark rooms and all the restraints, which many still impose.

As to the final success of the operation, I have always thought that nine-tenths of the dangers were incurred during the operation. If the entire manual has been satisfactorily, or as we now say smoothly done, under antiseptic precautions, it makes but little difference how the case is afterwards dressed, success is most likely to crown the skillful operation.

I know that eyes get well under bandaging and bed confinement for I have individually had the experience in hundreds of cases. I know that eyes after careful cataract extractions will get well without inflammatory complications, under a light adhesive strap dressing of the eye operated upon only, the other being left open for the guidance of the patients. Whether the patient is put to bed and kept quiet or whether he is allowed to sit up and walk about, whether he is undressed or is allowed to dress himself, whether he is made to keep silence or is allowed to talk, whether he is kept in the dark or is permitted to enjoy the pleasure and comfort of daylight, whether he is surrounded by no restraints or is rigidly deprived of all liberty. In all of these diametrically hostile conditions of after-treatment of cataract cases, those carefully and judiciously operated upon will have sight restored and all in like ratio. Then let us show mercy and consideration for the comfort of those who must submit to our dictation, and put as few restraints as possible upon those we operate upon, the more especially as experience is beginning to show that these restraints count for nothing in the final good results to be secured.

DISINFECTION OF SPUTA.—There have been placed at the Lariboisière Hospital, an apparatus for the disinfection, by a new procedure of antiseptics, of spittoons used by tuberculous patients. It is to be applied to all the hospitals of the Seine.

TUBERCULAR LARYNGITIS.

Read in the Section on Laryngology at the Thirty-ninth Annual Meeting of the American Medical Association, May 9, 1888.

D. EMMETT WELSH, M.D.,

OF GRAND RAPIDS, MICH.

In point of frequency tubercular disease of the larynx ranks third among the organs so affected; namely—the lungs, intestines, and the larynx. The disputed question as to its primary involvement, or its being secondary to an already existing lung difficulty, has been practically settled; as recently investigated and recorded cases have shown almost conclusively that a primary involvement can take place. Into this dispute this paper will not enter, but will endeavor to show forms of catarrhal inflammation existing primarily as such, as important factors in its production.

There are certain forms of catarrhal inflammation as seen in this vicinity—Western Michigan—attended with an excessive secretion of mucus and, at times, muco-pus. The nose is almost constantly filled with this secretion and the naso-pharynx and pharynx constantly bathed with the same. This secretion is, with difficulty, removed; and the mucous membrane of the nose is at times very noticeably inflamed with points of erosions and tendencies to epistaxis. The pharynx presents this same appearance but with this addition, that it presents a relaxed or flabby condition. The larynx is also flabby, and instead of the pinkish tinge of color it presents a grayish hue. The serous and mucous glands in this condition constantly freeing themselves of their secretion; the mucus passing down the pharynx and lodging in the arytenoid commissure, develops an irritation and provokes coughing. This is further increased by hawking and an extension of the inflammatory action.

The subjects of this condition are generally persons of a strumous habit, or those suffering from repeated attacks of colds, coupled with an already existing impairment of health.

A current of inspired air passing over this kind of tissue, though elevated in temperature and changed from a condition of dryness to one of moisture, is as injurious to the general health as dust and cold laden air is to the finer bronchi.

The stomach is impaired by the commingling of the food and mucus, thus adding another source of injury to an already existing condition. The impairment of health is noticed by loss of appetite, emaciation, pallor, and slightly elevated temperature. You are generally consulted on account of an irritative cough devoid of free expectoration, when, on inspection and examination the above condition is noted, or there occurs later a partial anæmic condition of the palatine arches and the pharynx, and a grayish hue to the larynx, with infiltration of the sub-mucous tissue.

From repeated attacks of inflammatory action the mucous membrane becomes lowered in its

vitality; there is partial arrest of its function, as shown by the loss of endosmotic action of the Schneiderian mucous membrane, due to a lack of absorption of the water which is condensed on its surface and drips from the nostrils. Hence catarrhal inflammations readily follow in those of lowered vitality. Further, there is a loss of elasticity in the capillaries of the part, as seen by the stagnation and retention of blood in them producing congestion of the parts. This stagnation may be complete or isolated, and, serum now being poured out, swellings necessarily result.

Allowing a still higher impaired vitality the serum and mucus exuded will contain pus corpuscles. Pus is not irritating in character, yet under certain circumstances it is rendered ichorous and then it is poisonous and destructive to neighboring tissue. The poisonous part is capable of uniting with and destroying animal tissue, and when absorbed into the circulation destroys the vitality of its constituents, giving rise to abscess and sepsis. Its effects on mucous surfaces are ulceration, mortification, or some actual loss of tissue.

Bearing in mind how easily ulceration of mucous surfaces takes place, we cannot but be surprised at those cases which seeming of minor importance certainly involve solutions of continuity in situations very open to absorption. This ulcerative process taking place in those already debilitated, or particularly those of a strumous habit, renders an abnormal sensibility of certain tissues liable to injury, and is most marked in mucous membranes, and their inflammatory action is exceedingly protracted. When inflammatory action, occurring in healthy individuals, does not lead to or cause death of the part, its product is absorbed or leads to suppuration or the formation of vascular connective tissue. But in struma and those generally debilitated, absorption is retarded and its tendency is to infiltrate and accumulate in the tissue and so lead to caseous change.

Tubercle, in its simplest sense, refers to a most typical stage of a certain tissue change; and to the process which precedes its appearance, as well as that which follows, may the term tubercular be applied. Tubercle is found in the floor of scrofulous ulcers and in certain affections of the mucous membrane, but it is not met with in all. Yet it must be borne in mind that there are grades and degrees of the tubercular process, as well as there are in inflammation.

The tubercular formative action may proceed thus far and, like inflammatory action, not always form pus.

Reindfleisch considers scrofula the starting-point of the tubercle-producing process, and considers that the tubercle is usually derived by a process of infection from some near or distant seat of scrofulous disease, thus tracing the connection between certain eruptions of tubercle in the lung

and a preliminary scrofulous bronchitis. If tubercle appears in a gland, then it is due to a scrofulous catarrh of the mucous surface; or, taking another example, a tubercular ulcer may begin as a catarrh and, after a time, tubercles appear at its base. Scrofula is the soil, tubercle the seed, and their relation confirms the theory that it is especially upon the soil of scrofula that the infection can and does take root and develop. Bearing now in mind the condition above given of the tubercular and pretubercular stage, and the lowered and impaired vitality of the naso-pharynx, and the existing debility of the patient, the proneness with which the mucous membrane becomes inflamed and the secretions of this membrane to become ichorous, and remotely, the formation of pus, I cannot but infer that catarrhal inflammations of the upper respiratory tract enters and creates a formative factor in the production of laryngeal tuberculosis, or even the naso-pharynx. And, knowing that tuberculosis is a disease manifesting itself primarily in the respiratory region, and that many catarrhal inflammations of the lungs begin in the larynx, it is fair to infer that in those cases where the eye reveals what the ear fails to detect, that the larynx is primarily attacked. Pathologically considered, four stages exist: anæmia, tumefaction, ulceration, caries and necrosis. On inspection, the appearances of the above are remarkably noticeable, and certain appearances are almost pathognomonic. Voice failure is a very early symptom, and during conversation a change in the character of the voice is very noticeable. In the beginning is noted a gruff hoarseness, which soon changes to a high falsetto, and gradually passes to a toneless whisper. At times there is complete aphonia.

Impaired respiration in the earlier stages is not a noticeable feature, yet, during the latter stages, dyspnoea may ensue, the result of tumefaction and the mechanical loss of mobility and ulceration of the cords.

Difficulty in swallowing is not always present, but when so, it is undoubtedly the symptom which hastens the death of the patient. At first liquids are only refused, and when taken they pass backward into the naso-pharynx or, from the impediment afforded to the movement of the epiglottis, may pass into the larynx and cause suffocation. As soon as ulceration takes place the pain on deglutition is extreme; thus the patient's refusal of food and the unfavorable termination that soon follows.

Pain on speaking is prominent, and when severe is usually referred to the ear. Cough is a prominent and a very distressing symptom, and in the advanced stages the paroxysms are productive of severe pain and are followed by extreme prostration. At first the cough is an irritative one, as though there was some foreign substance in the throat. Expectoration is only glairy in

character until ulceration is established, when it is mucus and muco-pus.

Hæmorrhage from the larynx is rare, and when suspected it is with much hesitancy we say it originated from the larynx.

During the stage of tumefaction a prominent feature is noticed. There is a pyriform thickening of the membrane covering the arytenoid cartilages and the commissure. This thickening is characteristic. The shape of the cartilages is completely masked by this club-shaped swelling, and it may extend upward to near or above the level of the cartilages and fill up the space between them. Previous to ulceration there are small whitish-gray patches noticeable either on the arytenoids or ventricular bands, existing singly or in groups. They are of short duration and ulceration speedily follows. Ulceration developing their peculiar character is a worm-eaten appearance, showing that degeneration has commenced in the deeper tissues. The ulcers are small and isolated at first, but soon unite by breaking down the intervening tissue and forming large ulcerative surfaces.

The following cases presented themselves for examination :

E. W., æt. 21 years, occupation mechanic. Had suffered from nasal catarrh for several years and complained of a dry, hacking cough and frequent attacks of nasal hæmorrhage. The nostrils and naso-pharynx were constantly filled with a mucus when, on its removal, the mucous membrane of the nares was inflamed, and the naso-pharynx and the larynx were of a lustreless color and presented a relaxed and flabby appearance. On phonation the distinctive features of the cartilages of Wrisberg and Santorini were masked and the vocal cords inflamed. The voice was changed in character to a marked gruffness. There was impaired appetite, emaciation, slight elevation of temperature, and a constant irritative cough. On auscultation and percussion the lung revealed no difficulty, yet there was a strong history of scrofula.

The nares and throat were sprayed with an alkaline spray, using Dobell's solution every day, and following the same up by spraying the throat with zinci. sulph., gr. ij to aq. 3j, on alternate days insufflation to the larynx of a finely triturated powder containing iodoform, tannin and bismuth sub. nit. Internally, syr. ferri iodid., syr. hypophosphites, Fellows; and free outdoor exercise. A continuance of this treatment was carried out for three months, when the patient increased in weight, the cough and hæmorrhage had ceased, and I discharged the case as well.

My second case was similar to the first, with this addition, that on the arytenoids and ventricular bands there were isolated points of ulceration, and more marked constitutional trouble and partial aphonia.

The changes made in treatment were the omission of tannin by insufflation, using iodoform and bismuth in equal proportions. After four months' treatment this case improved and, seemingly, is well now, and six months have elapsed.

It is unnecessary to enter into details of the different forms of treatment, as each case presents its peculiar characteristics. I think many cases will improve, and particularly of those persons under 21 years of age. When local treatment has been very noticeably beneficial to the laryngeal difficulty, and there exist deposits in the lungs, a change of climate is need. Colorado or New Mexico are preferable. In the stage of ulceration little or nothing can be done, save to alleviate the distressing symptoms as they arise. Care should be taken not to fatigue the patient by local treatment, allaying the pains and difficulty of deglutition by first cleansing the parts with some alkaline solution and then spraying the throat with a solution of cocaine; after which applying morphia, iodoform, and acacia or bismuth, and endeavoring to render the patient's last hours as comfortable as possible.

BINOCULAR ASTIGMATISM.

Read in the Section on Ophthalmology at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May 7, 1888.

BY H. CULBERTSON, M.D.,

OF ZANESVILLE, OHIO.
ASSISTANT SURGEON U. S. ARMY (RETIRED).

I have not infrequently encountered cases of astigmatism in which, after having corrected the error in each eye separately, and on testing both eyes simultaneously, in binocular vision, have found that vision proximum was not perfect, and in order to attain normal vision near at hand, in binocular sight, the angle denoting the axis of the cylindrical glass must be changed in one or both eyes.

In correcting this binocular defect, types and the astigmatic bars were employed. If the patient looks upon the floor it will seem to incline to the right or left, and on changing the axis of one or both cylinders, the surface will appear level. But the same defect will be apparent if a board 12 x 3 inches, with parallel sides, be held in front of the patient at one metre, and on a level with the eyes.

In these cases then, the answer will be, that the right or left end of said "object-board" is wider than the other. The angle of one or both cylinders is changed until each end of the "object-board" seems equally wide, or in other words, the sides are parallel; and then it will be found that the astigmatic bars are seen normally in near or far vision, in binocular vision. All of my refraction cases are estimated, not only by the usual methods, but the test as given is applied to all cases of astigmatism before the investigation is regarded as complete.

The use of glasses thus adapted has been successful in practice, with one or two exceptions, and in these the use of cylinders had to be dispensed with and spherical glasses employed.

This defect in binocular vision does not occur, of course, in all cases of astigmatism; but observation has taught me that such errors are far from being uncommon.

The following explanation offered of binocular astigmatism, seems more rational than any other with which I am familiar:

If a perpendicular be raised anteriorly and horizontally midway between the eyes from a base line intersecting each *fovea centralis*; then, in testing each astigmatic eye separately, the *axis of vision* will, in *vision remotum*, be parallel to said perpendicular. If the ocular muscles are normally balanced in action, the plane which cuts the visual axis in the cornea will be vertical. In the normal eye, *its fellow being covered*, during vision proximum, *still* the visual axis may be parallel to our perpendicular, and hence the angle of the axis of the cylindrical glass may often be the same in remote and near vision, *when each eye is tested singly*. In binocular vision, when astigmatism is present, the distance is so great, in remote vision, that the visual axes are each parallel to our perpendicular and to each other, and when the ocular muscles are harmonious in action, types and astigmatic bars are seen in normal form. So will vision be perfect near at hand, in astigmatism, provided this due balance is maintained in these muscles; but it is evident that, in proximal vision, the interni inferior oblique and superior and inferior recti muscles must exercise increased force and act in concert.

If these muscles do this, there can be no binocular astigmatism (in the sense cited) which requires re-correction, after each eye has been separately corrected, and *in vision near at hand*. But if these muscles are not harmonious, then the plane of the rays of light remaining the same, that is, vertical, and the *axis of rotation* of the eye at its upper extremity, inclining to the right or left, then it follows that the relation of the axis of the cylinder and the astigmatic meridian of the cornea has been changed, and in order to restore this relation the axis of the cylinder must be made to correspond with the modified position of the defective corneal meridian.

Let the following case illustrate: In binocular and proximal vision, suppose the left inferior oblique fails to act sufficiently to maintain the axis of rotation vertical, and that the inner fibres of the left superior rectus inclines said axis, at its upper extremity, towards the nose; then the rays of light will no longer cut the cornea in its vertical meridian, but towards the temporal side of—the should-be—vertical plane of the cornea. If the defective axis of the cylinder was at an angle of 180° in vision remotum, for proximal vision

the axis of the glass will have to be turned upward towards the displaced axis of rotation of the eyeball, as many degrees as *this* axis has deviated from the normal vertical perpendicular. If to 10° , then the angle would be 10° instead of 180° for the cylinder, the scale running from the temporal side. In other words, the measure of the deviation of the axis of rotation is the number of degrees of axis-displacement of the cylinder required in order to cause both sides of our "object-board" to appear parallel.

By trial the proper degree is found and in which eye the correction should be made, or if both eyes should be corrected.

In remote vision, the ocular muscles may or may not be harmonious, but if these are normally balanced in action when accommodation is at rest, it is not difficult to comprehend when the muscles supplied by the filaments of the third nerve are active, as in vision proximum, that this relation may be modified, and the *axis of rotation* so changed as to demand a re-correction for near and binocular vision. This change of cylinders does not interfere with normal vision remotum.

As these changes in the axis of the cylinders are observed in remote vision when the eyes are under the full influence of mydriatics, it results that the modification in the axis of rotation cannot be due, at least directly, to accommodation. This may be illustrated by the following case:

Miss S. L., aged 28 years. When under duobiose, she requires in the R. E. — $1.0 \text{ sp. } \bigcirc$ — $0.5 \text{ ax. } 130^\circ$, and in L. E. — $0.75 \bigcirc$ — $0.5 \text{ ax. } 40^\circ$, $V. 2, = \frac{1}{4}$, and the astigmatic bars appear normal. But in binocular vision, when the "object-board" is placed at one metre, the left end of said board seems wider; when the left cylinder is turned to 30° the sides of "object-board" are seen parallel, and the floor is level. When the effects of mydriatic had passed off, a week later, the cylinders at 30° and 130° induced seeming parallelism of the "object-board" and a level floor.

A few cases will be given illustrating the change of axis of cylindrical glasses in order to obtain normal and proximal binocular vision.

Case 1.—Miss A. V. C., aged 18 years. Under duobiose she requires in R. E., — $0.5 \text{ ax. } 90^\circ$, $V. = \frac{1}{4}$; and in L. E., — $1.25 \text{ ax. } 45^\circ$, $V. = \frac{1}{4}$. At one metre the "object-board" is narrower at the left end and floor inclines to her left in binocular vision. On turning the left cylinder to 60° the floor appears level and the sides of the board parallel; and the distance types and astigmatic bars are now seen normal.

Case 2.—Miss M. C., aged 27 years. Without mydriatic her case reveals that she requires in R. E., + $4.5 \bigcirc$ + $1.25 \text{ ax. } 105^\circ$, $V. = \frac{3}{4}$ and $\frac{2}{9} D.$; and in L. E., + $2.5 \bigcirc$ + $1.5 \text{ ax. } 120^\circ$, $V. = \frac{3}{4}$, and $\frac{1}{2} \frac{5}{9} D.$ $V. 2, = \frac{1}{2}$, and $\frac{1}{2} \frac{5}{9} D.$ The "object-board" sides are not parallel in binocular vision at one metre or the floor level, until the left cylin-

der-axis stands at 120° , which later does not correspond with the axis of the right eye, or 75° .

Case 3.—Miss A. H. B., aged 31. Without mydriatic, requires in R. E. $+0.5 \text{ C} + 25 \text{ ax. } 60^\circ$, V. $= \frac{4}{3}$ and $\frac{6}{30} \text{ D.}$; and in L. E. $+0.5 \text{ C} + 0.25 \text{ ax. } 100^\circ$ V. $= \frac{4}{3}$ and $\frac{6}{30}$. But binocular vision at one metre is not normal unless the axis of right cylinder is at 60° , in lieu of 80° , which latter would correspond with the axis of 100° in the left eye.

Case 4.—Miss J. R., aged 31. Under duboisine, she required in R. E. $+0.75 \text{ ax. } 50^\circ$, V. $= \frac{4}{3}$; and in L. E. $+0.75 \text{ ax. } 140^\circ$, V. $= \frac{4}{3}$. But binocular vision at one metre is not normal when the axis is at 130° left eye. A week later, when the effects of the mydriatic had passed off, binocular vision was perfect with the angles 140° and 50° in far and near vision.

Case 5.—Mr. J. G. S., aged 18 years. Under duboisine he requires in R. E. $+0.75 \text{ ax. } 40^\circ$, V. $= \frac{4}{3}$, and in L. E. $+0.75 \text{ ax. } 90^\circ$, V. $= \frac{4}{3} = \text{V. } 2$. After the effects of the mydriatic had passed off the axis of the right cylinder had to be turned to 90° in order to obviate binocular astigmatism at one metre, and then vision remotum was perfect.

Case 6.—Mr. J. N. S., aged 34 years, requires $+2.75 \text{ ax. } 75^\circ$, V. R. E. $= \frac{4}{3}$, and with $+3.5 \text{ ax. } 90^\circ$ V. L. E. $= \frac{4}{3}$; V. $2 = \frac{4}{3}$, and $\frac{6}{30}$. But the "object-board" was not seen parallel at one metre. On turning the left cylinder axis to 105° , binocular vision, near and far, became normal so far as glasses could accomplish, and these continued to serve him well.

Case 7.—Mr. F. G., aged 27 years, under duboisine requires R. E. $+1.25 \text{ ax. } 180^\circ$, V. $= \frac{4}{3}$, and in L. E. $+0.5 \text{ ax. } 180^\circ$, V. $= \frac{4}{3}$. But V. 2, while $= \frac{4}{3}$, reveals the sides of the "object-board" not parallel. On turning the axis of the right cylinder to 30° the "object-board" is seen normally and V. $2 = \frac{4}{3}$ and $\frac{6}{30} \text{ D.}$

Case 8.—Mr. L. I., aged 19 years, without duboisine the angle for each eye was 90° , but when under this mydriatic he required in R. E. $+3.5 \text{ ax. } 70^\circ$, V. $= \frac{4}{3}$, and the same cylinder in L. E. at 100° V. $= \frac{4}{3}$. The bars and types were seen normally, V. $2 = \frac{4}{3}$ and $\frac{6}{30}$. These glasses were given and failed to give proper vision. He was given $+3.5 \text{ ax. } 90^\circ$ for each eye, and binocular far and near vision became normal. He was not brought under mydriatic at the second application. It is certain that this patient under the mydriatics saw in binocular vision normally, but after accommodation was fully restored vision was abnormal in each eye with the first glasses, and to secure binocular far and near vision each cylinder was changed to 90° . This result may be due to the stimulus of accommodation exciting through the filaments of the third nerve, the superior recti in each eye. It is true that with the cylinders at 90° in each eye vision remotum of the bars and

types was normal. This can only be accounted for on the supposition that, *even in remote vision*, there must have been present accommodation. It is also true in this case that this ametropia developed $= \text{D. } 4.5$. Astigmatic hyperopia in each eye under duboisine, but accepted only a $+3.5$ cylinder when the effects of the mydriatic had passed off. He, therefore, was exercising $= +\text{D. } 1.0$ of accommodation for distant vision, and it is probable this would stimulate the superior recti sufficiently to change the axis of rotation in binocular remote vision to 90° each eye. This man's unaided near point was 19 cm. $= \text{D. } 5.3$, and as he had $= 4.5 \text{ D.}$ of hyperopia, his accommodation was $= +4.5 + 5.3 = +9.8 \text{ D.}$, which is equal to what he should have had at 20 years of age. In correcting $+3.5$ of this astigmatism he would possess an excess of accommodation $= 9.8 - 3.5 = 6.3 \text{ D.}$, in proximal vision.

Case 9.—Miss M. C., aged 30 years. Without duboisine and with $-1.0 \text{ C} - 0.75 \text{ ax. } 25^\circ$, V. R. E. $= \frac{4}{3}$, and with $-1.25 \text{ C} - 0.75 \text{ ax. } 150^\circ$, V. L. E. $= \frac{4}{3}$, V. $2 = \frac{4}{3}$. In binocular vision at one metre the right cylinder gave only normal vision when the axis was turned to 180° or 0° , or horizontally. Then the floor was also level, the bars alike, and types seen normally in far and near vision. After the effects of the mydriatic had passed off these results held good.

Case 10.—Miss A. B., aged 23 years. Without mydriatic and with $-0.5 \text{ C} + 0.25 \text{ ax. } 180^\circ$, V. R. E. $= \frac{4}{3}$, and with $-1.75 \text{ C} - 1.75 \text{ ax. } 180^\circ$, V. L. E. $= \frac{4}{3}$ and V. $2 = \frac{4}{3}$ and $\frac{6}{30} \text{ D.}$ On using duboisine the formula became $-0.25 \text{ ax. } 145^\circ$, and V. R. E. $= \frac{4}{3}$ and $\frac{6}{30}$; and $-1.0 \text{ C} - 1.25 \text{ ax. } 180^\circ$, V. L. E. $= \frac{4}{3}$ and $\frac{6}{30}$, and V. $2 = \frac{4}{3}$ and $\frac{6}{30}$. Now the "object-board" sides were parallel, the floor level, and the bars normal; but the tests for binocular vision were not normal when the axis of the right cylinder was placed at 180° . These glasses held good subsequently.

It may be claimed that the foregoing results are due to our not having found the correct axis in the monocular tests of each eye. This assumption would be untenable, because every care was taken in correcting each eye singly, both in far and near vision; but on attempting binocular vision, especially at one metre, or less, distance from the ametropia, the sides of the "object-board" were not seen parallel, nor the floor level. When the axis of one or both cylinders were changed, then, and then only, binocular vision-tests became normal. But in these cases the axes of the cylinders did not correspond.

The explanation given may not be the true solution, and accommodation may have a direct influence in the result, by changing the form of individual sectors of the crystalline lens, but the fact remains that there is such a phenomenon as *binocular astigmatism*.

If, in calling your attention to this subject, I

shall induce any to investigate it, and possibly determine the true solution, I shall rest content with the result.

Zanesville, O., May 7, 1888.

THE FORCIBLE AND IMMEDIATE REDUCTION OF OLD SUBLUXATION OF THE TIBIA.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY E. H. BRADFORD, M.D.,
OF BOSTON, MASS.

The subluxation of the tibia in chronic disease of the knee-joint is so common a deformity that no description of it is needed. It is well understood that it is caused by the reflex spasmodic contraction of the hamstring muscles pulling the tibia backward in a joint whose ligaments and capsule have been relaxed by disease. This relaxation is not often to be demonstrated clinically, as motion of the sort causes pain usually—occasionally, however, cases will be met where the inflammatory process is so subacute that the tibia can be pushed forward and back without pain, owing to the relaxed condition of the posterior capsule and the crucial ligaments. This painless condition is of course not so uncommon in the knee-joint affections occurring in tabes (spinal arthropathies, Charcot's disease).

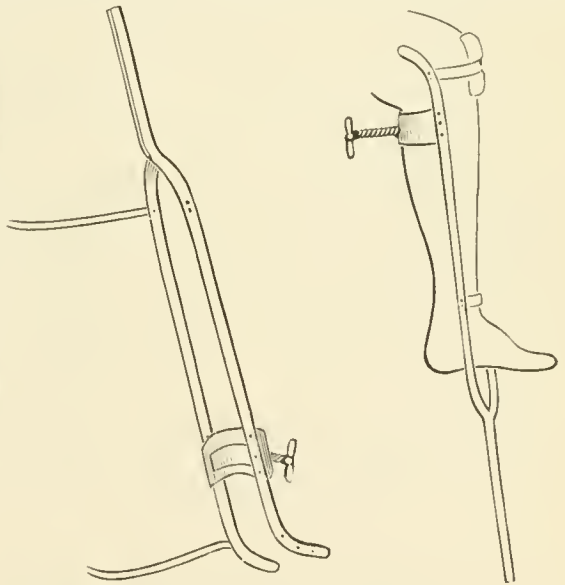
In cases of severe tubercular osteitis, when a spontaneous recovery has taken place, with fibrous ankylosis and subluxation of the tibia, it will be found in the severest cases that the cicatricial contraction of the capsule is so firm that, on attempting to forcibly straighten the limb, the head of the tibia cannot be made to slide forward as it should, but is held back in its position of subluxation not only by the hamstring tendons, but largely by the posterior wall of the contracted capsule of the joint. If the limb is pulled straight the tibia remains subluxated. In the lighter cases the head of the tibia can be pushed or pulled forwards manually, either with or without the help of tenotomy of the hamstrings, or by means of a mechanical appliance the subluxation can gradually be corrected. In the severest cases, however, this cannot be accomplished—or only accomplished after the prolonged employment of considerable and painful force.

A moment's reflection is sufficient to show that raising the lower part of the tibia, if the latter is subluxated at the knee, will not correct the deformity; neither will a simple pull upon the leg, separating the tibia from the femur, unless there is also a pressure upon the head of the femur forward. This latter is impossible while the posterior ligament is so strong as to resist such forward pressure.

In order to determine the practicability of

stretching the resisting ligaments in a normal knee-joint, experiments were made through the kindness of Prof. Dwight, of the Harvard Medical School, using on a cadaver the appliance to be described, and it was found that the tibia could be pushed forward (*i. e.* subluxated forwards) fully an inch. The first resistance encountered is the posterior crucial ligament, which becomes torn after the application of considerable force. The posterior ligament can be stretched and affords but little resistance in a normal joint.

In the distortion following chronic disease of the knee-joint with flexion at the knee and the head of the tibia subluxated, no resistance to correction will be found from the crucial ligaments which are absorbed in the morbid process, but the posterior ligaments and the posterior wall will, in cases of long standing, be found extremely firm. In such cases, before the limb can be made straight and the subluxation corrected, the contracted posterior ligaments and capsule must be stretched, enabling the tibia to slide over the condyles of the femur as in normal extension at the knee-joint. This can be accomplished in the following way: The patient being under the influence of an anæsthetic, the knee should be forcibly flexed in order to break up the intra-articular adhesion. The apparatus indicated in the accompanying diagram is then applied to the limb and pressure



from behind forwards, by means of the screw force, brought to bear upon the head of the tibia, counter-pressure being exerted on the ends of the condyles and the lower end of the tibia. The vessels and nerves lying deep in the popliteal space being well protected by the bellies of thick muscles, are in no danger of injury by such pressure, and the skin, as has been abundantly proved by osteocla-

sis, is capable of bearing without injury a great amount of momentary pressure. When the head of the tibia has been pushed forward to an extent the limb may be extended, and if it is found that some subluxation still remains, the procedure should be repeated or continued until entire correction is accomplished. After this is effected the limb should be held straight and secured against recontraction by a plaster of Paris bandage applied high up in the thigh and including the whole leg and foot. The patella and joint should be well protected by cotton before the application of the bandage. Or, instead of a gypsum bandage, an appliance of the principle of a Thomas knee splint may be used.

There is considerable pain for a day following the operation, but beyond that but little inconvenience; the patient should be able to go about using crutches in a few weeks. The plaster bandage should be worn a month or so, and for some time subsequent some form of retention appliance to prevent recontraction.

The procedure is only indicated in a limited class of resistant cases, and is manifestly contraindicated in acute cases. The writer has found it of service in the two following cases:

Case 1.—M. H., æt. 22. Caries of the knee-joint at the age of 4. Has never been able to walk since that time without the use of crutches or cane. Complete recovery took place, except that a marked amount of deformity was left. The patient was unable to place the heel to the ground and could bear but little weight upon the toe, the leg being flexed at an angle of 130° with the femur. Marked subluxation of the femur was present. The joint was perfectly stiff.

Forcible correction was applied in the way described, and the limb fixed with a plaster bandage for two months. Crutches were discontinued at the end of six months, and at the present time the patient can stand upon the whole foot; the subluxation has been entirely corrected. Flexion of but a few degrees exists (10°), and the patient is able to walk without a cane, though using one by preference.

Case 2 resembles Case 1, except that the patient is a boy of 12 and the deformity has persisted not more than four years. Correction was made as in Case 1, and with a satisfactory result.

DR. PANCOAST, of Philadelphia, thought the method proposed by the essayist an admirable one for replacement of the tibia in the form of displacement under consideration; for, unless we adopt this or some other means of pressing the tibia to the front and retaining it in that position, our efforts will be a failure. We do not have the posterior ligament much interfered with; but the great danger is not only to the blood-vessels, but also to the nerves. I know of cases where the nerves have been injured; where the hamstring

tendons have been ruptured; where the arteries have been injured, and where gangrene supervened. Now, if we think that by forcing the foot forward we stretch the posterior ligament, we make a great mistake. That ligament is going to resist stretching as long as possible. Ligaments are made, not for stretching, but for the purpose of allowing motion of the joint without yielding. If you pull upon a man's arm with as much force as you can summon you will see that there is no stretching of the ligaments. They are made for inelasticity. If there is yielding of ligaments, it is because the ligaments are in a pathological condition. It must be after they have been pathological for a long time. In cases of "white swelling," synovitis of the knee-joint, the white fibrous tissue undergoes a change; it does not undergo a sudden change and it does not stretch, but during the time that it is undergoing the process of which I have spoken, it is absorbing moisture, and thus enlarges slowly, by capillary enlargement. Every one of us knows that it is a very slow process. So it is in cases of any joint. I have a case now under my care in which I am at a loss to know whether to use *brisement* force or not, or whether it would be better to reduce it by gradual pressure. It is difficult to say, too, whether cutting down upon the joint and removing a V-shaped piece of bone, and then restoring the position of the limb, is not the best procedure in most of these cases.

DR. D. McLEAN, CHAIRMAN: I am glad that Dr. Pancoast did not allow this interesting paper to go by default. We recognize certain of these cases of subluxation which we can rectify; but to think that we can do so in old cases of long standing is, I think, too much. In those cases the structures about the joint undergo too much change, and I do not think that it is safe or rational to think that we can do much in these cases. It will take the reports of more than two cases to lead us to endorse the procedure under consideration. I am inclined to adopt what Dr. Pancoast says with reference to exsection, that it is questionable if it is not the best procedure in many of these cases.

EXOPHTHALMIC GOITRE AND ITS TREATMENT BY TINCTURE OF STROPHANTHUS.

*Read before the Mississippi Valley Medical Society, at St. Louis, Mo.,
September 25, 1888.*

BY DANIEL R. BROWER, M.D.,

PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM IN THE WOMAN'S
MEDICAL COLLEGE; LECTURER ON THE PRACTICE OF MEDICINE
IN KUSH MEDICAL COLLEGE, SPRING COURSE,
CHICAGO, ILL.

In this paper I desire to invite your attention anew to the more prominent features in the clinical history and diagnosis of exophthalmic goitre, and suggest its treatment by strophanthus.

The eyes, the thyroid gland, and the circulatory system are usually all perverted by the morbid process in this disease. The order of their sequence varies, but usually the circulatory disorders are first manifested. These consist of increased frequency of the pulse, palpitation, and dilatation of the arteries. The pulse in a mild case is about 100, but it may reach such a point in frequency as is impossible to count. The frequency varies with the emotional condition. Indeed, the impression made by the heart's action is one of intense nervous excitement in the cases generally. In the early stages the heart sounds are normal, but anæmic murmurs may soon be found, and later along, organic murmurs—organic murmurs that have resulted from the dilatation of the heart. This dilatation is a condition invariably present in chronic cases. The arteries are dilated and show increased pulsation, due in part to the increased force of the heart's action, but more especially to the lowered tones of the vessels. Pulsation is especially manifest in the carotids, thyroid arteries, and the abdominal aorta. The goitre, ordinarily, does not show itself until some time after the cardiac symptoms. It is a soft, elastic, and painless enlargement, usually symmetrical, but often the right side is more enlarged than the left. The enlargement is seldom great, and it undergoes frequent changes in size from emotional disturbances, and may be absent altogether. There can usually be detected a loud blowing murmur, and sometimes distinct pulsation in the gland itself. They are very rarely present in the ordinary bronchocele, hence are of value in differential diagnosis.

The exophthalmos usually appears soon after the swelling of the thyroid, but occasionally before it, and still more rarely may precede it and the cardiac symptoms. In some cases it is absent altogether. The degree of exophthalmos varies from a slight prominence to such an excessive protrusion that no part of the globe is covered by lids. It is usually bilateral, but not always symmetrical; it often appears earlier in one eye than in the other, and the prominence of the one may exceed that of the other.

The ophthalmoscope will show pulsation in the arteries of the retina, when this pulsation can scarcely be detected elsewhere; hence this method of examination is a valuable aid to diagnosis.

Von Graefe first called attention to another useful diagnostic sign about the eyes, and that is a want of harmony between the movements of the eyeball and the upper lid. If you direct the patient to cast the eye downwards it will be found that the upper lid does not follow the movement of the eye at all, or if it does, then abnormally.

The temperature of the body is usually elevated from .5° to 1° Fahr. A muscular tremor, sometimes coarse and jerky like chorea, and sometimes fine and regular like paralysis-agitans, is

present in almost every case. It is confined in great part to the larger muscles. The head, fingers, and toes are usually exempt from this tremor. All the organs of the body sympathize more or less with the ordinary complexns of symptoms.

The gastro-intestinal area often shows loss of appetite, impaired digestion, nausea, vomiting and diarrhœa, and as a result there is marked emaciation.

The nutrition of the brain suffers much and is manifest in insomnia, headache, dizziness, weakness of thought and memory, irritability of temper, neuralgia; and this disordered nutrition not rarely leads up to insanity.

The respiratory system shows disorder in cough, oppression in breathing, and intercostal neuralgia.

The diagnosis of exophthalmic goitre, when the three classical symptoms are present, is easy, but in cases where the exophthalmos is absent, and where both goitre and exophthalmos are scarcely perceptible, there will be found great difficulty. In these cases the ophthalmoscope, as above mentioned, is a valuable aid; and the milliampère metre will also give valuable information, as first suggested by Dr. Vigorinus, by determining the condition of the electrical resistance, which in this disease is markedly diminished.

The morbid anatomy and pathology is no nearer solution than it was in 1825, when Pâry first described its symptoms. The various theories that have been proposed have been summarized in an excellent article by Dr. A. A. Eshner.¹ He reaches a conclusion that seems to be the most reasonable: That the symptoms are due to a disorder, functional in character, in the medulla oblongata, involving the cardio-inhibitory centre, the vaso-motor centre, the respiratory centre, and the other important centres located in that part. A careful consideration of the physiological functions of these centres will enable us to work out without much difficulty the pathogenesis of the disease.

The prognosis should be guarded. The disease may not only terminate fatally, according to von Graefe, in about 12 per centum of the cases, but not infrequently terminates in insanity. A great majority of the cases will certainly, if recognized early, yield to treatment. Early diagnosis is exceedingly important, for when structural changes have taken place in the heart and thyroid, the prognosis is unfavorable.

The treatment of this disease has been very unsatisfactory. The drugs in ordinary use have but little influence upon it; but I think we have found in strophanthus a remedy that in some cases is certainly of great value. I have administered the tincture of strophanthus in three cases with benefit. In the first case, a man 21 years old, who had been under the ordinary treatment

¹ "The Polyclinic," Philadelphia, July, 1888.

—tonics, alteratives, rest, electricity, for three months without any abatement of symptoms—indeed, with a steady progression of the disease, I commenced the use of tincture of strophanthus, 2-drop doses every six hours. The pulse at this time was so rapid that I could not count it. The dose was gradually increased, and when 10 drops were given the circulation was under control; pulse, when quiet, was 85 per minute. The exophthalmos and goitre gradually disappeared, and in about four weeks he was well. The strophanthus was gradually withdrawn and tonics substituted. This result was reached about eighteen months ago, and the patient continues well.

The second case was a female, aged 52, in whom the disease had continued about eighteen months. The strophanthus was given to her in about the same manner and about the same dose was necessary. An equally good result was obtained.

The third case has been under observation about ten days only, but the same influence is manifest as in the other two cases.

Dr. Norman Bridge, of Chicago, has administered the drug in two cases at my suggestion. In one case no effect was observed; in the other case he combined tonics with the strophanthus, and the patient made a rapid recovery.

Dr. E. Fletcher Ingals, of Chicago, tells me that he has administered it in one case, pushing the dose to ten minims, three times a day, with benefit. In his case, he was using at the time he began the strophanthus hypodermic injections of carbolic acid, but he attributes the improvement in the case principally to the strophanthus.

I do not advise reliance solely upon strophanthus, but ordinary hygienic rules must be observed, such as the avoidance of fatigue, physical and mental excesses, a careful, regulated diet, attention to bowels and skin. I also advise the use of ordinary tonics, and the application of galvanic electricity to the cervical sympathetic nerves.

I also desire to call the Society's attention to the seeming value of strophanthus in other diseases that sometimes, at least, have their origin in disordered nutrition of the medulla, such as epilepsy, megrim, and, through its influence upon the medulla, as an agent in controlling maniacal excitement, such as acute delirious mania. I feel confident that it will materially assist in relieving the febrile state, as well as in protecting the heart against the depressing influences of the ordinary remedies used for this purpose.

THE BILLINGS MURDER TRIAL. A MEDICO-LEGAL QUESTION.

BY D. M. WICK, M.D.,
OF NEW HARTFORD, IOWA.

On the evening of the 21st of last December W. S. Kingsley, a young lawyer of Waverly,

Iowa, was found dying on the floor of his office with a bullet hole in his head. His left hand clinched tightly certain papers, while his right hand lay open, a few inches from right thigh, and a revolver, with two empty chambers, was found under right leg. A post-mortem examination was made. The ball (32) entered the skull at a point between the root of right nasal bone and eyebrow, passing to the right of the *cristi galli*, through right brain, circle of Willis, rupturing vessels, and lodged a half inch within left brain. Length of wound, five to six inches. The ventricles and cavities were filled with clotted blood.

Death occurred within ten minutes. M. E. Billings was arraigned as the murderer.

The State attempted to prove that a bullet wound in the brain, causing instantaneous rigor mortis of the left hand, would also cause the same condition in the right hand, providing the revolver was held in this hand at the time the ball was fired. In support of this, the doctors making the post-mortem were put upon the stand. Counsel, in pleas, also read from Wharton & Stillé's Medical Jurisprudence, Sec. 722, Vol. 2, 4th edition. The defense read numerous citations from various medical works, to show that the brain has certain motor tracts controlling the actions of certain muscles; that by vivisection, a portion of the brain of a living animal may be removed and certain results follow; this wing, or that leg, or that set of muscles are affected.

Medico-legally, the above is a nice question to decide. Evidently, both the State and defense attempted to solve this problem by considering rigor mortis produced through the agency of the nervous system, either from injury to the nerve centres or from blood-clots in the ventricles.

Tidy quotes Beclard and Hermann, stating rigor mortis is altogether independent of the nervous system, and further states that the nerve supplying the muscle, or indeed the removal of the entire brain and spinal cord during or before its occurrence, in no way affects it. Because the dying man was found with the left hand firmly grasping papers, while the right hand was open and near the revolver, is there any evidence, in a medico-legal view, that he fired the fatal shot himself and then let go the weapon? or was it placed under the right leg by his murderer?

OVERWORK ON RAILWAYS.—It is stated that the Board of Trade of England have ordered the principal railway companies to supply them with returns showing every occasion during two typical months this year and last on which any man concerned with the working of the traffic was on duty for more than twelve hours continuously. It is believed that the Government contemplate the introduction of a measure dealing with the subject.

MEDICAL PROGRESS.

ANEURISMS AND TUBERCLE-BACILLUS.—In a paper read before the Académie de Médecine, M. GERMAIN SÉE said that he had been struck by the fact, especially since the discovery of the tubercle-bacillus, that patients suffering from aneurism of the aorta often become tubercular, and die of pulmonary phthisis, attended with the formation of cavities, and progressing slowly without fever. This was observed by Stokes, and numerous cases can be found in the records of Pathological Societies. Out of 24 cases of aneurism under his own care, 7 were thus affected with pulmonary tuberculosis. It is now well-known that patients with cardiac affections are not exempt from phthisis. C. Paul has shown the frequent occurrence of phthisis in cases of narrowing of the pulmonary artery. Aortic aneurism must now be considered one of the agents favoring the development of the tubercle-bacillus. In aneurism, from the disturbance of the circulation there is a stagnation of the venous blood, and diminished activity of the gaseous exchanges between the gases of the blood and those of the atmosphere. In this internal gaseous medium (in the alveoli of the lungs and smallest air-passages) the bacillus appears to multiply when it enters the body by the respiratory tract. In aneurism the air is imperfectly renewed in the whole of the lungs, just as in normal conditions it is imperfectly renewed in the apices as compared with the rest of the lungs. In short, excess of oxygen hinders, deficiency favors the development of the bacillus. In this way the multiplication of the bacillus is accounted for; the way in which it penetrates into the pulmonary parenchyma in patients of all ages who are affected with aortic aneurism, remains to be shown.

Lately it has been found that ulcerative endocarditis, or even simple endocarditis, with vegetations is caused by a staphylo-coccus; rarely by a strepto-coccus; more rarely still by the tubercle-bacillus. The analogies between endocarditis and endarteritis allow us to suppose the existence of an endarteritis, due to the presence of a microbe. Are the lesions that affect the internal and middle coats of an artery which has undergone aneurismal dilatation caused by a bacillus? If this question is answered in the affirmative, one can easily explain how the bacillus is washed away from its position in the aneurismal wall to the lung and there multiplies.

In the treatment of aneurism M. Sée relies on iodide of potassium, the mode of action of which he explains as follows:

1. It relieves the dyspnoea due to catarrhal affections of the bronchial tubes by liquefying the effused secretions.

2. It aids the intra-pulmonary circulation, and diminishes venous stagnation.

3. The volume of the aneurismal tumor is diminished by contraction of the adventitious coat and the tissues surrounding it.

4. By reducing the size of the tumor, the pressure on the adjacent nerves is relieved, and pain therefore mitigated.

He gives the iodide in the amount of 30 grains daily, divided into three doses, to be taken at the beginning of a meal.

For the relief of pain he has found subcutaneous injections of antipyrin most efficient. When a cardio-vascular tonic is required he has obtained good results from sulphate of sparteine, and rejects altogether caffeine and digitalis.—*Bulletin de l'Académie de Médecine*, Aug. 14, 1888.

GLYCERINE AS A SURGICAL DRESSING.—MR. CHARLES E. S. FLEMMING says: We want a dressing that is non-irritating, antiseptic, will not become adherent, will allow free drainage, will not allow the discharges to get hard and caked, will be freely miscible with the discharges, and not evaporate at any temperature of the body nor occupy the place intended for the discharges. We have, I think, what we want in the glycerine of starch of the Pharmacopœia, with some antiseptic dissolved in it; for example, corrosive sublimate 1 in 1,000 parts. The starch, added for convenience of applying the glycerine, in addition forms a non-irritating surface to apply to the wound and is a mechanical protection; it is most conveniently applied thickly spread on one or more layers of Gamgee tissue or some absorbent wool. This application is not irritating, is antiseptic, and is removed with the greatest ease from any wounded surface. As glycerine is freely miscible with the discharges it is quite absorbent, discharge in passing into and through the dressing becomes mixed with the glycerine, and as this does not evaporate it is thus prevented from becoming caked or hard and dry. The glycerine, itself hygroscopic, does not usurp the place of the discharge nor prevent the free escape of the watery vapors. Such a dressing after several days will be found moist, soft, flexible, and easily removed; it is heavy with the quantity of fluid it contains, a proof of its absorptive powers. The discharges are not collected in one spot. Next the wound there is a jelly-like layer which is easily removed, having a clean surface, and the sutures, if any, distinct and easily taken out, not being caked with blood.

In my own practice I have found healing of incised wounds under this dressing quick and accurate, and the dressing of lacerated and contused wounds is absolutely painless and very quick; I have found it of much benefit in those chronic granulating wounds which every dressing seems to irritate, and have applied it with success as a

daily dressing in two cases of purulent conjunctivitis. I have not had an opportunity of trying, but should think glycerine and starch might be used with advantage in skin grafting.—*British Medical Journal*, Sept. 22, 1888.

CONNECTION BETWEEN ALBUMINURIA AND DISEASE OF THE PLACENTA (*Schmidt's Jahrb. d. Mediz.*)—Fehling has recently drawn attention to to connection between nephritis and disease of the placenta, relative to death of the fœtus, and further investigations since then have confirmed his (Fehling's) views. WIEDOW refers to a series of old published cases which, without having been properly explained then, speak for the relation of both diseases; Simpson, of Edinburg, regarded already early in the year 1860 albuminuria as the cause of disease of the placenta. Lately cases of this kind have also been described by Cohn, to which are added in Wiedow's treatise further observations from the "Freiburg Clinic." Mostly eclampsia intra or post partum, morbid kidney of pregnancy, were in question; once the necropsy revealed contracted kidneys; dead or extremely insufficiently nourished children and with it regularly anatomical changes of the placenta were found. Microscopically these appeared as numerous yellowish-white nodes, belonging either to the maternal portion of the placenta, or being found on the surface. Microscopically, according to Wiedow's researches, they represented the result of a coagulation and necrosis of the follicular epithelium. That there exists a connection between albuminuria and disease of the placenta is scarcely to be doubted; but difficult to answer is the question whether the change in the placenta is the consequence or cause of the albuminuria. For some cases the former view will hold good, but not for all. Sometimes normal placenta are found in spite of nephritis, sometimes the death of the child has already occurred before irritation of the kidneys presents itself, or the changes in the placenta are of an earlier date than the albuminuria. Finally it is unexplainable that, in cases of twins, one placenta is found diseased and the other normal. The proper final explanation raises still great difficulties and must be reserved for further investigations.—*American Journal of Obstetrics*, October, 1888.

PICROADONIDIN, THE ACTIVE PRINCIPLE OF ADONIS VERNALIS.—PROF. PODVYSOTSKI, of Kazan, publishes in the *Méditsinskoe Obozrénie* some researches upon the active principle existing in Adonis vernalis. He finds by chemical analyses of the entire plant there is an amorphous substance of the nature of a glucoside (picroadonidin) which is the active principle, but that together with this there are present an orange-yellow substance (adonido-quercitin), a sugar (adonido-dulciturum), which crystalizes in beautiful prisms, a physio-

logically inactive glucoside, and an acid already pretty well known, and existing in aconitum napellus and some species of equisetum, and therefore called aconitic or equisetetic acid, $C_6H_5O_6$. Hitherto all attempts to isolate the active principle of Adonis vernalis have resulted in mixtures of the several substances named in various preparations, so it is not surprising that the so-called adonidins of different observers presented very dissimilar properties. Picroadonidin has an extremely bitter taste. It is easily soluble in water and alcohol, and slightly so in chloroform. It possesses all the physiological properties of the plant itself in a very high degree.—*Lancet*, October 13, 1888.

USE OF ANTIPYRIN IN THE NASAL PASSAGES.—DR. F. WHITEHILL HINKEL, of Buffalo, draws the following conclusions from clinical experience:

1. A solution of antipyrin possesses hæmostatic properties when sprayed into the nose, though not superior to cocaine.
2. Antipyrin in about 4 per cent. solution may be used upon the nasal mucous membrane with temporary relief to occlusion from engorgement of the turbinates, and with sedative effects upon irritable states.
3. It is most effective where the element of irritation exceeds that of inflammation.
4. It presents an advantage over cocaine in not producing local numbness and dryness, and in the absence of the general stimulating properties of cocaine, causing sleeplessness, headache, etc. In cases such as hay-fever, where an agent of relief is used for long periods, antipyrin as a nasal spray is less likely than cocaine to produce constitutional disturbance or to lead to a "habit."
5. Antipyrin presents the disadvantage of causing more or less severe smarting, and of being unequal to the relief of severe inflammation or extreme occlusion of the nares.
6. Its antiseptic and stimulant properties will probably make it serviceable as an application to fresh wounds and to granulations and ulcerations in the nasal chambers.
7. Combined with cocaine, it increases the local action of the latter, enabling it to be used in weaker solution.—*N. Y. Med. Journ.*, Oct. 20, '88.

INJECTIONS OF WARM WATER IN EPITHELIOMA OF THE CERVIX.—DE TORNERY draws the following conclusions:

1. Injections of warm water at 102.2° to 104° F., for about half an hour, twice a day, morning and evening, disinfect the vagina, cleanse it, and considerably diminish the ichorous discharge.
2. These injections diminish the loss of blood, and improve the general health.
3. In the majority of cases the pains are diminished, so that there is less need of injections of morphine.—*France Médicale*, No. 86, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.
PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, NOVEMBER 3, 1888.

"HOW FAR CAN LEGISLATION AID IN MAINTAINING A PROPER STANDARD OF MEDICAL EDUCATION?"

Such is the title of a paper read before the American Social Science Association, at the annual meeting held at Saratoga on September 5, by Mr. W. A. PURRINGTON, Counsel of the Medical Society of the County of New York. This paper, says the author, "is a statement of what I conceive to be general principles and fair inferences from an experience of some years, as counsel of the medical societies of the State and County of New York, in drafting and securing the enactment of the present by no means perfect medical statute of the State, and enforcing in the County of New York obedience to its provisions."

At the beginning of last summer Mr. Purrrington sent out a number of circular letters of inquiry upon the general topic of medical legislation; "almost every reply to the circulars expressed approval of some system of regulating by statute the practice of medicine; and the opinion was also strongly expressed that such legislation as had been already, crude and imperfect though it is, has perceptibly improved the standard of medical education."

At the beginning of his paper the author lays down certain postulates. In the first place, he says, such legislation as he was about to consider was considered by the courts as both constitutional and highly desirable. In the second place, the principle, and the only principle upon which such legislation can be justified is *salus populi*,—the

principle of security, of self-protection against fraud and ignorance. It is not the principle of protection for the medical profession that justifies such legislation, but protection of the public. Mr. Purrrington goes on to speak of the evils of charlatanry, and then of the legal remedies against the immoralities of quackery, and of the existing statutes that recognize the diploma as conferring the right to practice. "While it may be perfectly true," he says, "that the probabilities are greatly in favor of a beneficial result from these laws in limiting the number of uneducated practitioners of physic, it is also quite as true that a fictitious value is given by such legislation to a mere piece of parchment, and a standard set which cannot be higher than that of the poorest college whose diploma is recognized as a license; and it is quite possible that in many cases persons of fair attainments acquired through extra-collegiate study may be debarred, temporarily at all events, from a right possessed by a far more ignorant graduate of some contemptible school incorporated by a too complaisant Legislature." It is seen, then, that a statute must not only be right in its purposes, but also that it must neither work greater evil than it prevents, nor be impracticable of enforcement. The chief purpose of legislators in times past, Mr. Purrrington points out, was the punishment and remedy of evil already committed; but the tendency of modern times is towards prevention—to use a homely simile, locking the door before the thief gets in and the property is taken out.

Mr. Purrrington now goes on to discuss the question, within what limits is it wise to exercise the police power of the State to regulate the practice of medicine, and how far can its exercise aid in maintaining a proper standard of medical education? The law, says Mr. Purrrington, has nothing to do with medical theories. "The utmost it can do successfully is to prescribe that none shall practice medicine except persons educated in those branches of science that all admit are essential to an understanding of morbid conditions of our species, and possessed besides of a fair general education. It cannot prohibit the practice of sectarian medicine and such delusions as the mind-cure and Christian science, for this would be an assumption by the law to prescribe what system of healing shall be followed; and it might as reasonably command—as, indeed, I believe it does in Mormonism—that all the sick should be treated by

anointing with oil in conjunction with prayer by the elders." Certainly, coming from one learned in the law, this is a surprising statement; and when we remember the principle upon which he says medical legislation is justified—*salus populi*—it does not fall short of being paradoxical. True, the law cannot prohibit theories and opinions of mind-curers and Christian scientists; it cannot prohibit thought; but to say that it cannot prohibit certain practices is a very different matter. Mr. Purrington continues: "If a man who has passed his examinations in such branches as above indicated (the various branches of medicine) shall conclude to adhere uniformly in practice to the doctrines of *similia* or of *contraria*, or even to the profundities of Mumbo Jumbo, or mind-cure, the law cannot prevent him. For his errors, he will be liable always in damages, no matter what system he adopts; and with that we must be content." Hence we must conclude that should the makers of the law, the people, finally come to the conclusion that the "profundities of Mumbo Jumbo" are dangerous, and subversive of the very thing that medical legislation must conserve—*salus populi*—it cannot prohibit such practices, but must be content with holding the practitioner in damages for his errors!

The author, in speaking of the ways in which legislation can aid in maintaining a proper standard of medical education, points out that it can do so chiefly by vesting the licensing power in a central Board of Medical Examiners, and says that the law should not recognize any diploma as of itself conferring the right to practice medicine; the possession of a diploma may be required as antecedent to examination, but it should not be allowed to take the place of such examination. "It is to the interest not only of the public, but of every medical college of high standard, that the diplomas of what have become known as 'diploma mills' shall be deprived of the licensing power, which is their sole value." Legislation, he thinks, may aid in raising the standard by fixing a minimum age under which no one shall be allowed to practice medicine; by requiring a fixed term of study of certainly not less than two graded years (did he mean not less than *three* years?); by requiring proof by examination or certificate that each candidate for license had studied before beginning his professional career at least those branches of a gen-

eral education in which law students are examined in this State (New York) before they commence their legal studies (the reader will of course note the very close relationship between the practice of law and that of medicine, and the similarity of the preliminary educations required for them!); by declaring that no medical school—including in the terms schools of dentistry, pharmacy, and mid-wifery—shall be incorporated by special act, and providing a general law for the incorporation of such schools only upon proof made of the possession by the incorporators of sufficient capital—not less than a hundred thousand dollars—and teaching plant to justify the belief that the school will be capable of exercising faithfully its franchises; the provision of a minimum course of medical study. We cannot agree with Mr. Purrington that the regulation of all details of examinations should be left to the board of examiners. A good law should require that the colleges hold certain examinations during the course and at the expiration of the term of medical study, besides the examination for license by the medical examining board. Nor does the author give any good reason why "it would be most wise to omit any examination in those obscure topics of therapeutics and materia medica."

We have not space for more extended consideration of this paper. Coming from a member of the bar, and the Counsel to the New York County Medical Society, it will most probably have much weight, and is worthy of consideration. The paper seems, unfortunately, to have been prepared hastily; there is nothing to show that the medical laws of other countries had been carefully studied, with the view of grafting their better elements into our laws if possible. "There is too much of the *laissez faire* policy exhibited," is the criticism of a prominent member of the Chicago Bar. With our best colleges demanding three years, and the colleges of foreign countries demanding four years of medical study, it is very late to speak of "not less than two graded years." We hope to see the day when medical legislation in this country will have gone farther in raising the standard of medical education in this country than the point beyond which the author says it would not be wise for the legislation to go.

DR. SOMMER has been appointed Prof. Budge's successor to the Chair of Anatomy at Greifswald.

THE PATHOLOGY OF PERNICIOUS ANÆMIA.

DR. WILLIAM HUNTER has recently concluded, in the *Lancet*, a most interesting paper on this subject, being the record of a series of investigations made with the object of throwing some light on the pathology of the disease called *progressive anæmia* or *pernicious anæmia*. These investigations were partly clinical and partly pathological. It must be said that Dr. Hunter has occupied himself with a most important task, when we remember the interest taken in this affection since Addison called attention to it.

Space is wanting for more than a summary of the results of the investigations, and some short comment upon them. In the first place, he concludes, pernicious anæmia is to be regarded as a special disease, both clinically and pathologically. It constitutes a distinct variety of idiopathic anæmia. *Second*. Its essential pathological feature is an excessive destruction of blood. *Third*. The most important pathological change to be found is the presence of a large excess of iron in the liver. *Fourth*. This condition of the liver serves at once to distinguish pernicious anæmia *post-mortem* from all varieties of *symptomatic* anæmia, as also from the anæmia resulting from the loss of blood. *Fifth*. The blood-destruction characteristic of this form of anæmia differs both in its nature and its seats from that found in malaria, in paroxysmal hæmoglobinuria, and other forms of hæmoglobinuria. *Sixth*. The view can no longer be held that the occurrence of *hæmoglobinuria* simply depends on the quantity of hæmoglobin set free. *Seventh*. On the contrary, the *seat* of the destruction and the *form assumed by the hæmoglobin* on being set free are important conditions regulating the presence or absence of hæmoglobinuria in any case in which an excessive disintegration of corpuscles has occurred. *Eighth*. In paroxysmal hæmoglobinuria the disintegration of corpuscles occurs in the general circulation, and is due to the rapid dissolution of the red corpuscles. *Ninth*. In pernicious anæmia the seat of disintegration is chiefly the portal circulation, more especially that portion of it contained within the spleen and liver, and the destruction is affected by the action of certain poisonous agents, probably of a cadaveric nature, absorbed from the intestinal tract.

Thus it will be seen that Dr. Hunter's investigations seriously disturb some existing illusions

in regard to the pathology of pernicious anæmia—among others, that the affection is dependent upon some impairment of the normal process of blood-formation. The investigations show, also, that pernicious anæmia is quite distinct from the anæmias secondary to and due to wasting diseases, loss of blood, or diseases of the organs of nutrition.

LABORATORIES FOR BACTERIOLOGICAL AND ORIGINAL INVESTIGATION.

The Trustees of the Hoagland Laboratory announce to the medical profession of Brooklyn, N. Y., the completion and equipment for practical work of their laboratory at the corner of Henry and Pacific streets. Dr. Geo. M. Sternberg, the Director, being absent for further prosecution of his investigation into the causes of yellow fever, by order of the President, the course of lectures on bacteriology previously announced will be postponed until his return. But George T. Kemp, Ph.D., Johns Hopkins University, has been appointed as Associate in Bacteriology and Physiology, and with his assistance practical instruction in bacteriology will be given during Winter and Spring.

With fairly well-equipped laboratories for instruction and practical research in bacteriology, physiology and pathology at the Johns Hopkins, Baltimore; at the University, Pennsylvania; the Carnegie, New York; the Hoagland, Brooklyn; the Harvard, Boston; the Chicago Medical College, Chicago; and some others, it can no longer be claimed that American students are obliged to cross the Atlantic either for instruction in these departments or for facilities for prosecuting original researches.

AMERICAN MEDICAL ASSOCIATION.

The Fortieth Annual Meeting of this Association will be held at Newport, R. I., on Tuesday, the 25th of June, 1889, instead of the *first* Tuesday in June, as appointed at the meeting in Cincinnati, for the reasons previously mentioned in THE JOURNAL. Next year will also be the 250th anniversary of the settlement of Newport, and all circumstances favor a meeting of the Association of unusual interest. The Rhode Island State Society is cordially coöperating with the Local Committee of Arrangements. We are informed that acceptances have been received from each of the

gentlemen elected to deliver the general addresses at the meeting in Newport. The Address in Medicine will be given by Professor Wm. Pepper, of Philadelphia; the Address in Surgery by Professor P. S. Connor, of Cincinnati; and the Address in State Medicine by Professor W. H. Welch, of Baltimore.

The following constitute the Local Committee of Arrangements: H. R. Storer, Chairman; W. Thornton Parker, Secretary; C. F. Barker, M. E. Baldwin, C. A. Brackett, J. P. Curley, P. F. Curley, J. P. Donovan, H. Ecroyd, Jr., V. M. Francis, T. A. Kenefick, G. M. Odell, F. H. Rankin, W. C. Rives, Jr., S. H. Sears, W. S. Sherman, H. E. Turner.

Associate Committee, appointed by the Rhode Island Medical Society, G. D. Hersey, W. H. Palmer, G. T. Swarts, all of Providence.

THE AMERICAN ACADEMY OF MEDICINE.

The next annual meeting of this Society is to be held in New York city on the 13th and 14th of November, 1888. It was organized twelve years since, for the very laudable purpose of encouraging a higher standard of literary and scientific education on the part of those who wish to enter upon the study of medicine. As one of the influences favoring the accomplishment of this object, a constitutional provision was adopted making the possession of the degree of Bachelor or Master of Arts, received after a systematic course of study, and of the degree of Doctor of Medicine, followed by three years of practice, necessary conditions of eligibility for membership in the Academy. It was the first, and we think the only attempt that has been made to sustain a National medical society, membership of which was to be restricted to such members of the profession as had received prior to commencing the study of medicine a true collegiate general education.

It was thought by its founders that the establishment of such a society would be a constant stimulus to the ambition of young men intending to enter the medical profession to so extend their general education as to render themselves eligible for membership in it; and that the reports, papers, and discussions elicited at the annual meetings would do much to develop and direct public sentiment on the subject of a higher standard of education and mental discipline as a preparation

for professional life. We hope the meeting in New York will be a large and profitable one, and that it will venture to select Chicago as its next place of annual meeting, or at least some city in the interior valley of the Continent.

PHYSIOLOGY IN THE PUBLIC SCHOOLS.

The readers of the *Century* will remember the very amusing article that appeared about a year ago from the pen of Samuel L. Clemens (Mark Twain), on the answers by public school children to examination questions in the public schools. Several months ago the *Popular Science Monthly*, in commenting on the abuses, educational and otherwise, of the public schools, declared that it was now demonstrated that the public school system should be abolished. In the August number of the *Popular Science Monthly* was an article by "a teacher" on "Physiology in the Public Schools," containing a large number of answers to examination questions. This article shows that physiology is as badly taught in the English as in American public schools, and that the misinformation in regard to the subject of study is due to too much learning by rote without comprehension of the meaning of the terms employed—and to bad teaching; possibly, also, to the fact that children are set at physiological studies at too early an age. And we must agree with what the *London Architect* says in regard to this matter: "These exercises may be thought amusing, but it should be borne in mind that every word represents more or less pain to some unhappy child in endeavoring to recall ponderous words which were without meaning. Education in sanitary matters is desirable, but, as it is at present conducted in public schools, it must injure children's minds by habituating them to the use of words which they cannot understand." Certainly, it is a serious blunder to lumber up the mind of a child with words that carry no meaning. The words of the Wise Man may be applicable here: "In all thy getting get *understanding*."

MEDICAL STATISTICS OF RUSSIA.

The Statistical Annual of the Russian Empire for 1884-85 gives the total population (of Russia in Europe?) as 108,787,235. In 1885 there were 4,597,441 births, with an excess of about 133,000 males; 129,700 children were illegitimate. The

deaths numbered 3,291,824, with an excess of females. The net increase in population was therefore 1,305,617. There were 42,946 violent deaths, including 3,450 homicides and 2,494 suicides.

The deaths from various diseases were: 153,559 from febrile affections; 11,506 from small-pox; 8,505 from scarlatina; 19,320 from diphtheria, 8,024 from measles; 2,123 from pertussis, and 28 from *cholera nostras*. Of 589,274 cases of zymotic disease, 86,229 terminated fatally.

The number of hospitals in Russia in 1884-85 was 867, containing 57,825 beds. To these must be added 17 hospitals containing 8,584 beds for the use of foreigners.

The number of cases of syphilis in Russia in the period mentioned was 399,951. The number of vaccinations practiced was 2,300,404.

The medical *personnel* included, in 1884, 3,302 sanitary physicians, 7,653 physicians of inferior rank, and 3,170 midwives. The eight universities had 4,459 students of medicine.

One is forcibly struck with the insufficiency of the number of medical men for so large a population, with the small number of medical schools, the very large number of medical students as compared with the number of practitioners, and with the value that the Russian Government seems to attach to vital statistics. In spite of their small number the medical profession of Russia have added much that is valuable to the literature of medicine, and would have added much more that is accessible but for their apparently insurmountable language.

EDITORIAL NOTES.

PROFESSOR G. RUGE, of Heidelberg, has been elected Professor of Anatomy in the University of Amsterdam.

A MORGUE FOR LONDON.—A French contemporary states that there is a project for the establishment in London of a morgue similar to that in Paris.

DR. HENRY GRADLE, of this city, we are pleased to say, was acquitted of malpractice in the recent suit against him. We hope to have an account of the case in an early issue.

DR. JOSEPH SARGENT, a well-known practitioner of Worcester, Mass., for almost half a century, died of pneumonia on October 13. He

was born in 1815, and graduated from Harvard Medical School in 1837. He was a man of great public spirit, and his loss will be severely felt by both the profession and the public.

"LAPAROTOMY IN THE TREATMENT OF INTRAPERITONEAL INJURIES," an address delivered before the Medical Society of London by SIR WILLIAM MACCORMAC, has been translated into German by Dr. Thamhayn, Volkmann's assistant, and is issued as one of the numbers of Volkmann's *Sammlung Klinischer Vorträge*.

DURING the recent visit of DR. MORRIS H. HENRY, of New York, to Turkey, he was most kindly treated by the surgeons of Constantinople, and was honored by His Imperial Highness, the Sultan, with the Imperial Order Commander de l'Osmanie, and a present of jewels. This is a gratifying acknowledgment of the interest taken by foreigners in American surgery.

PHARMACY IN RUSSIA is now receiving the attention of the Government. A plan is being prepared by which the status and qualifications of a Master in Pharmacy will be equal to that of the Russian Doctor of Medicine. The Master in Pharmacy will have to spend eight semesters at a university. The two sexes are to have equal privileges. The *Apothekerverein* of Germany has set on foot a movement looking to the same ends.

GYNÆCOLOGICAL SOCIETY OF CHICAGO.—At the annual meeting of this Society, held at the Richelieu Hotel on October 19, the retiring President, Dr. Henry T. Byford, delivered his Annual Address, and the following officers were elected: President, Dr. Charles T. Parkes; First Vice-President, Dr. Edmund J. Doering; Second Vice-President, Dr. E. C. Dudley; Editor, Dr. W. W. Jaggard; Secretary, Dr. Edward Warren Sawyer; Treasurer, Dr. Frank E. Waxham.

OHIO STATE SANITARY ASSOCIATION.—The Sixth Annual Meeting of this Association will be held in the City Hall, Canton, Ohio, November 14th and 15th, 1888. A full and important programme of work has been arranged for the two days' session. The first session will commence at 10 A.M. of the 14th, and the closing meeting will begin at 1 P.M. of the 15th. Arrangements have been made for commutation of railroad fares, but for further information address the Secretary, R. Harvey Reed, M.D., Mansfield, Ohio.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

*Stated Meeting, September 12, 1888.*THE PRESIDENT, J. SOLIS COHEN, M.D.,
IN THE CHAIR.DR. J. SOLIS-COHEN read a paper on
SYPHILIS OF THE LARYNX, TRACHEA, AND
BRONCHI.

Syphilitic processes not only injure the structural integrity of the larynx and trachea directly but, by their location in the regions occupied by the origin and course of nerve supply, they lead to denutrition of the tissues generally, and to serious motor impairments of the muscles of the larynx. The distinctions between secondary and tertiary syphilis, as manifested in the upper air-passages, are so irregular and uncertain, that many writers prefer the terms recent and tardy. In fact, however, secondary lesions are sometimes tardy and tertiary lesions sometimes precocious. Secondary lesions are sometimes present as the sole manifestation of that period. Sometimes they precede cutaneous manifestations. Most frequently they occur in subjects already affected with what are known as mucous patches in other portions of mucous membrane, or with early cutaneous syphilides.

Pathology.—The earliest and far most frequent manifestations are subacute and diffusely hyperæmic conditions of portions of the mucous membrane, of varied extent and intensity; an erythema with turgescence, but without hypersecretion, occurring within from six to ten weeks after infection. The affected surface exhibits at first the usual rose-color of congestion, but, as stasis, infiltrations, and hæmic transudations occur, it becomes more or less livid in patches which present mottled or flaky discolorations. Superficial erosions often ensue. Occasionally deep-seated ulceration occurs. Sometimes paresis of the muscles of the larynx is produced. The erosions may be due simply to denutrition of epithelium from mere pressure by infiltrations, or to disintegration of a characteristic proliferative lesion known as the papule or mucous patch, by some termed broad condyloma, a product, according to Virchow, of the same histological character as the indurated chancre and the various gummy formations, namely, an infiltration of tissue with nucleated embryonic cells. These papules are characteristic, but by no means frequent syphilitic products in the larynx, and are so infrequent in the trachea that their occurrence there is denied by authorities the very highest. They are multiple recurrent lesions, almost invariably associated with mucous patches on other mucous membranes; usually lasting from

three to five weeks, and sometimes much longer. They are observed from within a few weeks to a few months after infection; sometimes earlier, occasionally as late as eighteen months. They are far the more frequent in tuberculous subjects who have contracted syphilis.

The erosions which occur on the surface of the papules or on simply erythematous mucous membranes are usually superficial, but may extend through the mucous membrane and beneath it, under bad hygienic conditions. Under slight provocative exposures to cold and wet, fluxionary oedema sometimes takes place in their vicinity, occasionally to such an extent as to be menacing to life. The epiglottis often becomes very much thickened, the vocal bands thickened and dentedly eroded. There seems to be no tendency for secondary lesions to extend from the larynx to the trachea.

Tertiary lesions come under notice most frequently in the stage of ulceration, usually following the liquefaction of gummous nodules, gummous infiltrations, or true gummata, as may be. The epiglottis is the most frequent seat; so frequent, that its lingual and lateral ulceration has been erroneously deemed pathognomonic of syphilis; but destructive lesions may occur in every portion of the larynx. The ulceration is both serpiginous and deep-seated, and, while more commonly unilateral, there seems practically to be little limit to its phagedenic destructive ravages under unfavorable conditions, as it destroys and penetrates all the tissues, soft and cartilaginous. Slight provocation may produce fluxionary oedema in this stage also, which may be of the most serious character. Serious hæmorrhages may occur from penetration of blood-vessels, and apnoea may ensue from incarceration of fragments of necrosed cartilages and soft tissues. Ulceration may be attended with proliferative vegetations which may occlude the air passages. Superficial ulceration may heal with moderate cicatrization which eventually becomes hardly noticeable. Deep and extensive ulcerations heal under peculiar whitish, lustrous, stellate, retractile cicatrices, similar to those which follow burns. Instead of cicatrizations, adhesions may take place between contiguous raw surfaces, and strictures of various kinds be formed in consequence.

The gummous lesions preceding these ulcerations are of three kinds: small gummous multiple nodules or nodular syphilides; diffuse gummous infiltration; and gummata proper, usually isolated.

Small gummous nodules (nodular syphilide, Lewin) vary in size from that of small bird-shot to that of peas, and are usually grouped in well-defined determinate figures in the body of the mucous membrane, and often so contiguous as to appear confluent. Gummata proper, present as firm hemispherical nodules or tumors, from the size of peas to that of cherries or almonds, and

sometimes much larger, in the connective tissue beneath the mucous membrane; usually uniform in outline, sometimes lobulated; undischored or reddish at the base, yellowish at the summit. Gummous infiltrations present as more or less longitudinal or more diffuse submucous thickenings corrugating the surface of the mucous membranes. All these products may undergo absorption.

When not absorbed, gummous nodules undergo purulent liquefaction. At this time they become softer, and more yellowish at the summit, the mucous membrane at the base becoming more inflamed and thickened, the whole mass looking not unlike a furuncle. The summit becomes perforated, and gives exit to thickened, yellow pus, with granular admixture of debris at first. The orifice rapidly enlarges by ulceration until it becomes fully as large in circumference as the nodule was, or larger, and readily coalesces with ulcerations from contiguous nodules. The ulceration extends in depth until it occupies the entire volume of the nodules, and may then penetrate all the tissues beneath, even to the perichondrium and cartilage.

The ulceration of the nodulous syphilide, as studied in a series of cases by Lewin, is said to take place more from periphery to centre than the reverse, being shallow at first, and then gradually deepening. The ulcer is round, depressed, and sharply bordered. Its bed is covered with a secretion which, from previous fatty degeneration, or purulent metamorphosis, is either thickish, or nearly lardaceous, or composed of purulent detritus.

The more longitudinal and the diffuser gummous infiltrations undergo liquefactive ulceration much more slowly; but the subsequent ulceration, when unchecked, extends much more rapidly, and becomes more readily serpiginous and phagedenic; so that, coalescing with similar conditions in the vicinity, large surfaces in continuity become involved in its ravages. As it extends in superficiality it penetrates slowly in depth until it also involves the deeper structures close to the perichondrium, and sometimes to the cartilage. Ulceration varies in rapidity, extent and penetration according to the succulence or resistance of the tissues contiguous. The ulceration from diffuse gummous infiltration is preceded, according to Lewin, by extensive fatty degeneration of its surface, which gives it an almost grayish-white tinge. This is soon followed by actual defects which, at first shallow, increase in depth, and gradually penetrate to the perichondrium and the cartilage. These ulcers are characterized, like those from the nodules, by sharp definite circumscription, and by their being surrounded with an inflammatory swollen zone. They appear often as though a piece of swollen tissue had been cut out. The edges are often beset with slight crenations, which give them a gnawed appearance, but are never undermined; and their bottom is covered with a yellowish-white adherent mass, com-

posed of pus, fatty detritus, and shreds of tissue. Gummata proper sometimes remain unchanged for prolonged periods. When they undergo degenerative metamorphosis there is formed, according to Lewin, only the characteristic viscid fluid, suppuration being exceptional. Ulceration takes place, however, in some instances, and penetrates deeply into the tissues beneath, as in the other two forms. Under unfavorable hygienic conditions of system, or of surroundings, the phagedenic ravages may become uncontrollable. They have been known to attack an artificial opening made to prevent suffocation by a gumma (Holden, *New York Medical Journal*, January 29, 1887).

Perichondritis and chondritis being set up after either form, the ulceration may penetrate the cartilage to the tissues external, forming a perichondrial abscess, which ruptures externally by a more or less circuitous route, whence the fragments of dead tissues are discharged.

Taken in point of frequency the cartilaginous structures seem to be vulnerable in the order following: epiglottis, posterior vocal processes, arytenoids, supra-arytenoids, cricoid, cuneiform and thyroid. Coming to the softer parts, the vocal bands are attacked next in frequency to the epiglottis, the left band far more frequently than the right; the interior supraglottic walls of the larynx, the aryepiglottic folds, the interarytenoid fold, the posterior wall, the ventricular bands, the subglottic walls of the larynx, the exterior of the soft parts in the pyriform sinus. When the cartilages are attacked, whether primitively or consecutively, the chain of morbid phenomena is perichondritis, chondritis, calcification, caries, necrosis, and elimination of sequestra in crumbled masses and in fragments. The elimination of dead cartilages may consume months, and even years. It usually takes place by the interior route, occasionally by the exterior. In both instances abscess and fistula are formed, and elimination of large fragments by the interior route sometimes produces suffocative paroxysms, and occasionally actual suffocation.

The epiglottis, as repeatedly noted, is especially vulnerable to the syphilitic process, and every variety of lesion possible may ensue in any extent, from insignificant erosion to complete destruction, the character of the lesion depending upon that of the structure destroyed. It is this, as pointed out by Seiler, which gives such an irregular conformation to the epiglottis when its glands have been destroyed.

Exulceration of the entire mucous membrane of the edge reveals the exposed cartilaginous structure as a yellowish-white stripe imbedded between two thickened masses of spongy-looking tissue. Ulceration of the cartilage often commences at the anterior surface in the form of a round ulcer with thickened excavated edges. Destructive ulceration usually progresses from the side and from the

edge. When the valve is only partially destroyed its remains may present two or more irregular fragments separated by fissures of varying depth, or a single fragment of any breadth, from a small stripe to nearly the entire bulk.

When totally destroyed the orifice of the larynx is separated from the post-lingual sulcus by a more or less irregular ridge of ulcerated tissue, which, after cicatrization, presents as a pale, deformed stump. This, however, does not, as a rule, prevent glutition, and in some instances does not even interfere with it; the occlusion of the larynx being effected by the base of the tongue, on the one hand, and by close approximation of the ventricular bands and sphincter-like approximation of the aryepiglottic folds, on the other.

The other cartilages, when the subject of destructive progressive ulceration, are macerated out of their investments, as it were. The ulcerative process extends into the cartilage, surrounding it, if a small one, or circumscribing a portion of it, if it be a large one. The cartilage then perishes by necrosis, is laid bare and becomes detached from its connections, in some instances remaining entangled in a sort of pocket scooped out of the soft tissues. The necrosed cartilage finally breaks through to the interior and is usually discharged by expectoration. If it be situated below the glottis, paroxysms of suffocation may ensue, or even actual apnoea, as from any other foreign body. Exfoliations of the cricoid cartilage are the most frequent source of these untoward results, which, however, sometimes ensue from exfoliations of the thyroid.

The ulcerative process sometimes penetrates blood-vessels and hæmorrhage follows. Such hæmorrhage has been known to terminate fatally (Türk, *Op. cit.*, p. 413, illustrated).

The vocal bands frequently sustain permanent lesion varying from minute losses of substance to entire destruction. Transversal dentated erosion of the border is not uncommon, and detachment from the posterior vocal processes not infrequent. Sometimes irregular papillary proliferations take place, forming mobile, projecting, pyramidal, or irregular dendritic vegetations, which project like soft, mobile stalactites into the interior, and which are large enough, in exceptional instances, to demand operative interference. Similar conditions and productions may prevail with the ventricular bands. Superficial ulcerations may heal with moderate cicatrization, which eventually becomes hardly noticeable. In deep and extensive ulcerations, when cicatrization occurs, a peculiar lustrous, whitish, stellate, contractile cicatrix is formed, similar to the syphilitic cicatrix in other mucous membranes. Instead of cicatrization, adhesions often take place between ulcerated surfaces, and thus a variety of injurious morbid conditions occur. The vocal bands may become united by a broad fibrinous band stretching between

them, or by a similar obturator formed of their thickened and distended mucous membrane. The membranous web thus formed between the vocal bands usually unites them for a variable distance, commencing at the commissure; the posterior border of the structure being crescentic in outline. Exceptionally the cords may become involved their entire length, with an orifice in the central portion of the web (Navratil).

This membranous union has been known to take place in six days (Rossbach: *Langenbeck Archives*, vol. xiv). In a case watched by Sommerbrodt (*Berlin. klin. Woch.*, April 1, 1878), the anterior third united in fourteen days, and the union of the bands was complete in six weeks. In other cases the vocal bands become united without any membrane intervention.

Other adhesions sometimes take place which may seriously impair glutition, phonation, and even respiration. These comprise depression of the epiglottis to one side or the other, or to an aryepiglottic fold, and preventing proper closure of the valve or complete elevation; adhesion of the epiglottis to either lateral pharyngeal wall; adhesion of ventricular to vocal band, sometimes preventing closure of the glottis, and often producing a shrill, weak, piping voice; adhesions anteriorly of the two vocal bands or of the two ventricular bands; adhesions of the inner surfaces of the mucous membrane of the arytenoid cartilages, so as to fix the vocal bands immovably in the median position. Other results of syphilitic laryngitis are hypertrophies, diffuse and discrete, of mucous membrane, connective tissues, or muscular substance, and consequent stricture, varying in extent, locality, and interference with function; myopathic paralysis; muscular atrophy and morbid growths.

Perichondritis or chondritis, whether following ulcerative destruction of the soft tissues or preceding it, usually excites considerable fibrinous infiltration into the adjacent submucous connective tissue, producing a chronic fibrinous oedema. When extensive, this produces suffocative symptoms, and may threaten asphyxia. Sometimes the submucous infiltrations become organized and transformed into dense fibrous tissues incapable of undergoing absorption, and thus they produce deformity, occlusion of the larynx, and stricture. The strictures are often incapable of yielding to systematic dilatation, even when instituted early; and hence tracheotomy is usually necessary to provide artificial means for respiration below the seat of obstruction. After tracheotomy, the process may progress to complete obliteration.

These strictures are of the most varying form and calibre, some of them distorting the configuration of the interior of the larynx almost out of recognition. Fortunately, most of them occur in the supra-glottic region, where they are far more accessible to effective treatment.

Lesions of either soft tissues or cartilage in the neighborhood of the important crico-arytenoid articulations excite non-specific inflammation of the joint which may produce true or false ankylosis. Syphilis is probably the most frequent cause of this lesion. When the specific process invades the joint, the ligaments and perichondrium suffer, and true ankylosis, or luxation, or disarticulation, and even discharge of the arytenoid and supra-arytenoid cartilages, may ensue.

In the latter stages of unrestrained lesion, the cachexia is much the same as in analogous advanced stages of tuberculosis.

Myopathic paralyses of the muscles of the larynx may occur in the later periods of secondary syphilis, and at any period of tertiary syphilis. They are most frequently unilateral, the left side being affected far oftener than the right. The onset is often sudden or acute, following severe or sudden exposure to cold and dampness. The paralysis often affects the dilator muscles, and bilateral paralysis of the dilators is not infrequent. Paralyses of the arytenoid muscle and of the entire constrictor group are the most frequent varieties. These paralyses differ in their pathological origin from other examples of paralysis in syphilis, which are due, respectively, to compression of the tract of the nerve-supply by diseased tracheo-bronchial glands or other structure, and to neural or cerebral lesions which present in the latter stages of the confirmed dyscrasia.

Tertiary lesions of the trachea are first observed so very frequently in the stage of ulceration, that it had been assumed that tertiary syphilis of the trachea always produces ulceration (Vierling). Schech and others have reported instances of resorption of gummata under specific medication. The clinical tendency, however, is to ulceration. Tracheal ulcerative lesions are sometimes unassociated with lesions elsewhere in the aerial tract. Much more commonly they are found associated with similar lesions in the larynx, in the bronchi, or in both.

Pharyngeal syphilis exists in thirty out of forty-six, collated by Vierling, and pulmonary syphilis in six out of fifty (Schech). They are often found associated with additional syphilitic lesions at a distance. In a large proportion of instances a primitive bronchus is affected, the left one the more frequently; in some, both primitive bronchi; in a few, the smaller ramifications (Vierling); and, exceptionally, even the minutest (Lancereaux). In some instances syphilitic lesion is confined to the bronchia (five cases, by Vierling). The upper portion of the trachea suffers most when the larynx is involved; the lower portion, when the disease is isolated or associated with syphilis of the bronchi. In some instances the middle portion alone suffers (Vigla and Charnal, Berger, Mackenzie, of Baltimore, Semon); exceptionally, the two extremities, with

complete conservation of the middle portion (Tessier, cited by Rey).

When not occurring in direct continuity with similar lesion in the larynx, the most frequent seat of ulceration is in the anterior surface of the lower portion of the trachea just above the bifurcation whence it extends upward, or in patches continuously sometimes as far as the cricoid cartilage; sometimes almost completely around the interior in periphery, occasionally completely around. Multiple perichondritis is easily set up and results in abscess, denudation of cartilage, calcification, caries, and necrosis. Portions of dead cartilage are sometimes coughed up in fragments. Sometimes semi-detached portions project into the interior and interfere seriously with respiration and with expectoration. The ulceration usually begins in a number of small ulcers which extend in depth and in periphery, baring the perichondrium, and causing portions of the cartilaginous rings, or entire rings, to undergo denudation, necrosis, and exfoliation. Coalescence with similar ulcerating surfaces, or phagedenic extension sometimes produces very extensive ravages which may involve nearly the entire circumference of the trachea, and nearly, occasionally quiet, its entire length. Flaps of detached membrane sometimes fall over, producing valvular impediments to inspiration, or to expiration, according to the position of the attachments. The cicatrization of annular ulcerations produces stricture often so low down as to be beyond relief even from tracheotomy, the parts not being well adapted to respond to artificial dilatation. The strictures are irregularly ovoidal in shape, sometimes funnel-shaped, and of varying thickness from a few lines to that of several rings.

These cicatrices may reduce the calibre of the trachea so considerably as to prevent respiration. Occlusion to the calibre of a crowquill is not uncommon, and still greater occlusion has been noted in some instances. Annular stricture at the bifurcation may become so great as barely to admit the passage of a delicate probe. (Obtulowicz: *Cent. f. Chir.*, 1879, No. 7).

Irregular annular dilatation of the trachea is often produced by the pressure of the air current above the stricture and sometimes below it. Even dilatation of the bronchi has been noticed.

Projecting ridges of cicatricial tissue below the point of stricture are sometimes so located as to occlude the inferior orifice of a tracheal canula more or less, a point not sufficiently recognized, for it might be practicable in some instances to push a canula into a position which would allow its inferior extremity to pass the obstruction.

Stricture of the bronchi is rare. It affects the left bronchus more frequently (Verneinel *et al.*); sometimes the right one (Wilks, *et al.*); occasionally both (Virchow, *et al.*). The connective tissue around the strictured portions usually un-

dergoes permanent sclerotic proliferation. Sometimes there is great peritracheal sclerosis, sometimes none. The peritracheal glands may undergo great enlargement. All these conditions superadded to the internal stricture, may greatly increase stenosis.

Ulceration sometimes penetrates through the trachea producing abscess opening into the œsophagus or the mediastinum, the aorta (Rokitansky: *Path. An.*, Bd. 111, p. 22; Wilks: *Trans. Path. Soc.*, London, 1865, p. 52), the pulmonary artery (Kelly: *Id.*, 1872, p. 45), or the vena cava (Turner: *Id.*, xxxvii. p. 117). In at least two instances of ulceration of the left bronchus the left branch of the pulmonary artery has been found perforated. (Vierling).

Inflammation around the trachea or bronchi sometimes produces adhesions to the œsophagus or to other tissues, which depresses the trachea and larynx and impairs their upward movements in glutition. Sometimes it produces peritracheal or tracheo-bronchial abscess. Abscess of bronchus, sometimes deeply seated, has occurred after tracheotomy, apparently as a result of too assiduous swabbing of the canula.

The lesions of hereditary syphilis are almost identical with those of the gummous infiltrations of tertiary syphilis. They sometimes appear very early. Ulcerations have been noticed in infants at 2 months of age (Parrot: *Prog. Méd.*, 1878, p. 653). Stricture from perichondritis has been noticed at the same age (Fränkel: *Wien. Med. Woch.*, 1868, No. 18; Parrot: loc. cit.).

Symptomatology.—The laryngeal symptoms of secondary syphilis are not characteristic. They are chiefly comprised in dissonant alterations of the voice, either hoarseness, dysphonia, and in some cases occasional or temporary aphonia. The hoarseness is supposed to have some peculiarity which has been termed *raucedo syphilitica*, but this is not the case. In some instances it is simply due to catarrhal laryngitis, in others to paresis of one or more of the constrictor muscles, or possibly to paralysis of the tensors. Respiration is not affected except in those instances in which œdema occurs in such a position as to occlude the passage of air, when it will be announced by dyspnœa and stridulous respiration, the characteristic symptoms of that condition. Titillation and cough are not as frequent as in inflammations of other origin. In many instances there is no tickling and no cough, no pain and no dysphagia.

Dysphagia is not present unless there be œdema of the parts utilized or pressed upon in glutition.

In tertiary syphilis of the larynx the symptoms are usually those of impairment of phonation, followed in severe cases by dyspnœa and stridor also, chiefly inspiratory. The stridor is worse at night from inaction of the auxiliary muscles of respiration. Should the mechanical impediment to respiration increase, inspiratory depression of

the soft parts below the sternum takes place. If relief is not obtained, artificially or otherwise, asphyxia supervenes from imperfect aëration of the blood. Suffocation may occur suddenly from impaction of detached cartilage; but it is more frequently slow enough in its approaches to allow time for tracheotomy.

Titillation and cough are more frequent in the earlier stages than in secondary syphilis; but they diminish after ulceration has taken place, except in so far as they are produced from time to time by morbid products detained upon diseased and adjacent surfaces. Pain is infrequent before the period of ulceration; after that it may be severe, and radiate into the ears as in other ulcerative diseases. In the early stage there is no expectoration. The earliest expectoration is of collateral catarrhal products only. As ulceration progresses it becomes muco-purulent, and then purulent and sanguineo-purulent, and mixed with detritus according to the stage and location of the lesion.

If gangrene takes place the odor becomes fetid, and the expectoration contains fragments of dead soft and cartilaginous tissue, as may be.

Dysphagia ensues when the disease is in a locality to interfere with glutition, and odympagia when ulcerations have occurred in the same localities.

In tertiary syphilis of the trachea the symptoms affect mainly the function of respiration, the voice often remaining normal even when breathing is seriously embarrassed.

Pain along the course of the trachea, if constant, is indicative of lesion at that particular point. Cases may run their entire course without any special symptom, even in the presence of stricture of the trachea, and of the bronchi, and of extensive disorganization as revealed at the post-mortem examination.

In hereditary syphilis, the symptoms are sometimes congenital and may remain practically continuous for years. Respiration and phonation are both affected. The cry of the infant sometimes possesses a shrill metallic resonance which has been compared to that of a tin trumpet. Cough is more frequent in the child than in the adult. Glutition is often difficult and sometimes painful. Expectoration occurs in the suppurative stages when the child is old enough to expel the products, which by infants are swallowed or retained in the air passages. Laryngismus is a symptom of frequent occurrence in young children.

Etiology.—The probable condition attracting the manifestation of constitutional syphilis to the larynx is superficial catarrhal laryngitis from hereditary or acquired proclivity, or from exposure, or from abuse of tobacco, alcohol, or other indulgence, or from misuse of the voice. Such exposures cause more males to be affected than females, as there is no assignable sexual reason

for preponderance. Tracheal lesions, on the other hand, have been reported more frequently in females, probably because the laryngeal lesion is attended to more promptly by the male. Syphilitic disease often extends by continuity from the oropharyngeal region to the larynx, principally along the pharyngo-epiglottic fold to the epiglottis, and thence along the aryteno-epiglottic fold, and from the two structures to the interior. Hereditary syphilis has been observed in intra-uterine life (Monti: *Med. Times*, Phila., April 28, 1877, p. 336). Hereditary syphilis of the intensest character has been occasionally observed at a very early age, as in the case of an infant whose symptoms began with coryza in the tenth week of life, and terminated in death by suffocation from stenosis nineteen days later. Post-mortem, with examination, revealed in addition to syphilitic lesions in the liver, destructive perichondritis of cricoid and left arytenoid cartilage, and fatty degeneration of arytenoid and both posterior crico-arytenoid muscles and the left superior nerve (Fränkel: *Wien. med. Woch.*, 1868, Nos. 69, 70, cited by Ziemssen and by Mackenzie). Children less than a year of age often show laryngeal lesions of hereditary syphilis, and ulcerative lesions have been seen at two months of age (Parrot: *Prog. Méd.*, 1878, p. 635). Many cases occur in children but a few years of age, and sometimes the manifestations are deferred to the period of puberty or even later. Indeed, in opposition to the received opinion of syphilographers, I have reason to believe that in a few instances I have seen its manifestations delayed as late as the third and even the fourth decennium. True, in such instances as the latter it is quite possible that infection may have been acquired in some method unknown, without having been followed by any secondary manifestations, or that early hereditary manifestations may have escaped recognition. The secondary manifestations occur most frequently in adolescents and young adults. They appear most frequently at periods varying from a few weeks to a few months after infection, sometimes as late as the fourteenth or seventeenth month (Morgan). Tertiary lesions are most frequent at rather maturer ages, and occur occasionally in quite advanced life. They have been reported as early as the sixteenth month (Türk, op. cit.), and as late in their first appearance as the thirtieth (Türk), and even the fiftieth year (Mackenzie). Tracheo-bronchial tertiary lesions have been reported as appearing as early as the ninth month after infection, but these lesions are usually coincident with the laryngeal lesions when not immediately consecutive to them.

Most of the instances of tracheal syphilis occur in individuals whose employments expose them to irritation from dusts of various kinds (Vierling: *Deutsches Arch. f. klin. Med.*, 1878, Bd. 21).

(To be concluded.)

PUBLIC HEALTH.

DISINFECTION AND DISINFECTANTS.

Conclusions of the Committee on Disinfectants of the American Public Health Association.

The most useful agents for the destruction of spore-containing infectious material are:

1. *Fire.* Complete destruction by burning.
2. *Steam under pressure.* 105° C. (221° Fahr.) for ten minutes.

3. *Boiling in water* for half an hour.

4. *Chloride of lime.*¹ A 4 per cent. solution.

5. *Mercuric chloride.* A solution of 1:500.

For the destruction of infectious material which owes its infecting power to the presence of micro-organisms not containing spores, the committee recommends:

1. *Fire.* Complete destruction by burning.
2. *Boiling in water* for ten minutes.
3. *Dry Heat.* 110° C. (230° Fahr.) for two hours.

4. *Chloride of lime.* A 2 per cent. solution.

5. *Solution of chlorinated soda.*² A 10 per cent. solution.

6. *Mercuric Chloride.* A solution of 1:2,000.

7. *Carbolic acid.* A 5 per cent. solution.

8. *Sulphate of copper.* A 5 per cent. solution.

9. *Chloride of zinc.* A 10 per cent. solution.

10. *Sulphur dioxide.*³ Exposure for twelve hours to an atmosphere containing at least 4 volumes per cent. of this gas in presence of moisture.

The committee would make the following recommendations with reference to the practical application of these agents for disinfecting purposes:

FOR EXCRETA.

(a) In the sick-room:

1. Chloride of lime in solution, 4 per cent.

In the absence of spores:

2. Carbolic acid in solution, 5 per cent.

3. Sulphate of copper in solution, 5 per cent.

(b) In privy vaults:

1. Mercuric chloride in solution, 1:500.⁴

2. Carbolic acid in solution, 5 per cent.

(c) For the disinfection and deodorization of the surfaces of masses of organic material in privy vaults, etc.:

Chloride of lime in powder.

FOR CLOTHING, BEDDING, ETC.

(a) Soiled underclothing, bed-linen, etc.:

1. Destruction by fire, if of little value.

2. Boiling for at least half an hour.

¹ Should contain at least 25 per cent. of available chlorine.

² Should contain at least 3 per cent. of available chlorine.

³ This will require the combustion of between 3 and 4 pounds of sulphur for every 1,000 cubic feet of air space.

⁴ The addition of an equal quantity of potassium permanganate as a deodorant, and to give color to the solution, is to be recommended.

3. Immersion in a solution of mercuric chloride of the strength of 1:2,000 for four hours.

4. Immersion in a 2 per cent. solution of carbolic acid for four hours.

(b) Outer garments of wool or silk, and similar articles, which would be injured by immersion in boiling water or in a disinfecting solution:

1. Exposure in a suitable apparatus to a current of steam for ten minutes.

2. Exposure to dry heat at a temperature of 110° C. (230° Fahr.) for two hours.

(c) Mattresses and blankets soiled by the discharges of the sick:

1. Destruction by fire.

2. Exposure to super-heated steam, 105° C. (221° Fahr.) for ten minutes.

(Mattresses to have the cover removed or freely opened.)

3. Immersion in boiling water for half an hour.

FURNITURE AND ARTICLES OF WOOD, LEATHER, AND PORCELAIN.

Washing, several times repeated, with:

1. Solution of carbolic acid, 2 per cent.

FOR THE PERSON.

The hands and general surface of the body of attendants of the sick, and of convalescents, should be washed with:

1. Solution of chlorinated soda diluted with nine parts of water, 1:10.

2. Carbolic acid, 2 per cent. solution.

3. Mercuric chloride, 1:1,000.

FOR THE DEAD.

Envelop the body in a sheet thoroughly saturated with:

1. Chloride of lime in solution, 4 per cent.

2. Mercuric chloride in solution, 1:500.

3. Carbolic acid in solution, 5 per cent.

FOR THE SICK-ROOM AND HOSPITAL WARDS.

(a) While occupied, wash all surfaces with:

1. Mercuric chloride in solution, 1:1,000.

2. Carbolic acid in solution, 2 per cent.

(b) When vacated, fumigate with sulphur dioxide for twelve hours, burning at least three pounds of sulphur for every 1,000 cubic feet of air-space in the room; then wash all surfaces with one of the above-mentioned disinfecting solutions, and afterward with soap and hot water; finally throw open doors and windows, and ventilate freely.

FOR MERCHANDISE AND THE MAILS.

The disinfection of merchandise and the mails will only be required under exceptional circumstances; free aeration will usually be sufficient. If disinfection seems necessary, fumigation with sulphur dioxide will be the only practicable method of accomplishing it without injury.

RAGS.

(a) Rags which have been used for wiping

away infectious discharges should at once be burned:

(b) Rags collected for the paper-makers during the prevalence of an epidemic should be disinfected before they are compressed in bales, by:

1. Exposure to super-heated steam of 105° C. (221° Fahr.) for ten minutes.

2. Immersion in boiling water for half an hour.

SHIPS.

(a) Infected ships at sea should be washed in every accessible place, and especially in the localities occupied by the sick, with:

1. Solution of mercuric chloride, 1:1,000.

2. Solution of carbolic acid, 2 per cent.

The bilge should be disinfected by the liberal use of a strong solution of mercuric chloride.

(b) Upon arrival at a quarantine station, an infected ship should at once be fumigated with sulphurous acid gas, using three pounds of sulphur for every 1,000 cubic feet of air-space; the cargo should then be discharged on lighters; a liberal supply of the concentrated solution of mercuric chloride (4 oz. to the gallon) should be thrown into the bilge, and at the end of twenty-four hours the bilge-water should be pumped out and replaced with pure sea-water: this should be repeated. A second fumigation, after the removal of the cargo, is recommended; all accessible surfaces should be washed with one of the disinfecting solutions heretofore recommended, and subsequently with soap and hot water.

FOR RAILWAY CARS.

The directions given for the disinfection of dwellings, hospital wards, and ships, apply as well to infected railway cars. The treatment of excreta with a disinfectant, before they are scattered along the tracks, seems desirable at all times in view of the fact that they may contain infectious germs. During the prevalence of an epidemic of cholera this is imperative. For this purpose the standard solution of chloride of lime is recommended.

At the annual meeting of the Sanitary Council of the Mississippi Valley, held in New Orleans, La., March 10, 11, 1885, the following resolution was adopted:

Resolved, That the secretary request from the chairman of the Committee on Disinfectants, appointed at the last meeting of the American Public Health Association, a plain, practical paper on "Disinfection and Disinfectants," for popular use and distribution, to be furnished to the chairman or the special committee of this council on General Sanitation.

In compliance with this request a Preliminary Report was prepared, which has been quite widely circulated. This report having been made before the experimental researches of the committee were completed, and being a "preliminary report," was only intended to serve a temporary purpose; but it has been thought best to revise it, and to introduce it into this our final report,

so that it may be available for distribution in a separate form if sanitary officials find it suitable for popular use.

DISINFECTION AND DISINFECTANTS.

The object of disinfection is to prevent the extension of infectious diseases by destroying the specific infectious material which gives rise to them. This is accomplished by the use of disinfectants.

There can be no partial disinfection of such material: either its infecting power is destroyed, or it is not. In the latter case there is a failure to disinfect. Nor can there be any disinfection in the absence of infectious material.

It has been proved for several kinds of infectious material, that its specific infecting power is due to the presence of living microorganisms, known in a general way as "disease germs;" and practical sanitation is now based upon the belief that the infecting agents in all kinds of infectious material are of this nature. Disinfection, therefore, consists essentially in the destruction of disease germs.

Popularly, the term disinfection is used in a much broader sense. Any chemical agent which destroys or masks bad odors, or which arrests putrefactive decomposition, is spoken of as a disinfectant. And in the absence of any infectious disease it is common to speak of disinfecting a foul cesspool, or bad smelling stable, or privy vault.

This popular use of the term has led to much misapprehension, and the agents which have been found to destroy bad odors—deodorizers—or to arrest putrefactive decomposition—antiseptics—have been confidently recommended and extensively used for the destruction of disease germs in the excreta of patients with cholera, typhoid fever, etc.

The injurious consequences which are likely to result from such misapprehension and misuse of the word disinfectant, will be appreciated when it is known that recent researches have demonstrated that many of the agents which have been found useful as deodorizers, or as antiseptics, are entirely without value, for the destruction of disease germs.

This is true, for example, as regards the sulphate of iron or copperas, a salt which has been extensively used with the idea that it is a valuable disinfectant. As a matter of fact, sulphate of iron in saturated solution does not destroy the vitality of disease germs, or the infecting power of material containing them. This salt is, nevertheless, a very valuable antiseptic, and its low price makes it one of the most available agents for the arrest of putrefactive decomposition.

Antiseptic agents, however, exercise a restraining influence upon the development of disease germs, and their use during epidemics is to be

recommended when masses of organic material in the vicinity of human habitations cannot be completely destroyed, or removed, or disinfected.

While an antiseptic agent is not necessarily a disinfectant, all disinfectants are antiseptics; for putrefactive decomposition is due to the development of "germs" of the same class as that to which disease germs belong, and the agents which destroy the latter also destroy the bacteria of putrefaction when brought in contact with them in sufficient quantity, or restrain their development when present in smaller amounts. A large number of the proprietary "disinfectants," so-called, which are in the market, are simply deodorizers or antiseptics, of greater or less value, and are entirely untrustworthy for disinfecting purposes.

Antiseptics are to be used at all times when it is impracticable to remove filth from the vicinity of human habitations, but they are a poor substitute for cleanliness. During the prevalence of epidemic diseases, such as yellow fever, typhoid fever, and cholera, it is better to use in privy-vaults, cess-pools, etc., those antiseptics which are also disinfectants, *i.e.*, germicides; and when the contents of such receptacles are known to be infected, this becomes imperative.

Still more important is the destruction at our seaport quarantine stations of infectious material which has its origin outside of the boundaries of the United States, and the destruction within our boundaries, of infectious material given off from the persons of those attacked with any infectious disease, whether imported or of indigenous origin.

In the sick-room we have disease germs at an advantage, for we know where to find them as well as how to kill them. Having this knowledge, not to apply it would be criminal negligence, for our efforts to restrict the extension of infectious diseases must depend largely upon the proper use of disinfectants in the sick-room.

GENERAL DIRECTIONS.

Disinfection of Excreta, etc. The infectious character of the dejections of patients suffering from cholera and from typhoid fever is well established; and this is true of mild cases and of the earliest stages of these diseases as well as of severe and fatal cases. It is probable that epidemic dysentery, tuberculosis, and perhaps diphtheria, yellow fever, scarlet fever, and typhus fever, may also be transmitted by means of the alvine discharges of the sick. It is therefore of the first importance that these should be disinfected. In cholera, diphtheria, yellow fever, and scarlet fever, all vomited material should also be looked upon as infectious. And in tuberculosis, diphtheria, scarlet fever, and infectious pneumonia, the sputa of the sick should be disinfected or destroyed by fire. It seems advisable also to treat the urine of patients sick with an infectious

disease with one of the disinfecting solutions below recommended.

Chloride of lime, or bleaching powder, is perhaps entitled to the first place for disinfecting excreta on account of the rapidity of its action. The following standard solution is recommended:

Dissolve chloride of lime of the best quality⁵ in pure water, in the proportion of six ounces to the gallon.

Use one quart of this solution for the disinfection of each discharge in cholera, typhoid fever, etc.⁶ Mix well, and leave in the vessel for at least one hour before throwing into privy-vault or water closet. The same directions apply for the disinfection of vomited matters. Infected sputum should be discharged directly into a cup half-full of the solution. A 5 per cent. solution of carbolic acid may be used instead of the chloride of lime solution, the time of exposure to the action of the disinfectant being four hours.

Disinfection of the person. The surface of the body of a sick person, or of his attendants, when soiled with infectious discharges, should be at once cleansed with a suitable disinfecting agent. For this purpose solution of chlorinated soda (liquor sodæ chlorinatæ) diluted with nine parts of water, or the standard solution of chloride of lime diluted with three parts of water, may be used. A 2 per cent. solution of carbolic acid is also suitable for this purpose, and under proper medical supervision the use of a solution of corrosive sublimate—1:1,000—is to be recommended.

In diseases like small-pox and scarlet fever, in which the infectious agent is given off from the entire surface of the body, occasional ablutions with the above mentioned solution of chlorinated soda are recommended.

In all infectious diseases the body of the dead should be enveloped in a sheet saturated with the standard solution of chloride of lime, or with a 5 per cent. solution of carbolic acid, or a 1:500 solution of corrosive sublimate.

Disinfection of clothing. Boiling for half an hour will destroy the vitality of all known disease germs, and there is no better way of disinfecting clothing or bedding which can be washed than to put it through the ordinary operations of the laundry. No delay should occur, however, between the time of removing soiled clothing from the person or the bed of the sick and its immersion in boiling water, or in one of the following solutions until this can be done:

Corrosive sublimate one drachm to the gallon of water (about 1:1,000), or,

Carbolic acid, pure, one ounce to the gallon of water (1:128).

⁵ Good chloride of lime should contain at least 25 per cent. of available chlorine (page 92). It may be purchased by the quantity at 3½ cents per pound. The cost of the standard solution recommended is, therefore, but little more than 1 cent a gallon. A clear solution may be obtained by filtration or by decantation, but the insoluble sediment does no harm, and this is an unnecessary refinement.

⁶ For a very copious discharge, use a large quantity.

The articles to be disinfected must be thoroughly soaked with the disinfecting solution and left in it for at least two hours, after which they may be wrung out and sent to the wash.

N. B. Solutions of corrosive sublimate should not be placed in metal receptacles, for the salt is decomposed and the mercury precipitated by contact with copper, lead, or tin. A wooden tub or earthen crock is a suitable receptacle for such solutions.

Clothing or bedding which cannot be washed should be disinfected by steam in a properly constructed disinfection chamber. In the absence of a suitable steam disinfecting apparatus, infected clothing and bedding should be burned.

Disinfection of the sick-room. In the sick-room no disinfectant can take the place of free ventilation and cleanliness. It is an axiom in sanitary science that it is impracticable to disinfect an occupied apartment for the reason that disease germs are not destroyed by the presence in the atmosphere of any known disinfectant in respirable quantity. Bad odors may be neutralized, but this does not constitute disinfection in the sense in which the term is here used. These bad odors are, for the most part, an indication of want of cleanliness, or of proper ventilation; and it is better to turn contaminated air out of the window or up the chimney than to attempt to purify it by the use of volatile chemical agents, such as carbolic acid, chlorine, etc., which are all more or less offensive to the sick, and are useless so far as disinfection—properly so called—is concerned.

When an apartment which has been occupied by a sick person with an infectious disease has been vacated, it should be disinfected. The object of disinfection in the sick-room is mainly the destruction of infectious material attached to surfaces, or deposited as dust upon window ledges, in crevices, etc. If the room has been properly cleansed and ventilated while still occupied by the sick person, and especially if it was stripped of carpets and unnecessary furniture at the outset of his attack, the difficulties of disinfection will be greatly reduced.

All surfaces should be thoroughly washed with the standard solution of chloride of lime diluted with three parts of water, or with 1:1,000 solution of corrosive sublimate. The walls and ceiling, if plastered, should be subsequently treated with a lime-wash. Especial care must be taken to wash away all dust from window ledges and other places where it may have settled, and thoroughly to cleanse crevices and out-of-the-way places. After this application of the disinfection solution, and an interval of twenty-four hours or longer for free ventilation, the floors and wood-work should be well scrubbed with soap and hot water, and this should be followed by a second more prolonged exposure to fresh air, admitted through open doors and windows.

As an additional precaution, fumigation with sulphurous acid gas is to be recommended, especially for rooms which have been occupied by patients with small-pox, scarlet fever, diphtheria, typhus fever and yellow fever. But fumigation with sulphurous acid gas alone, as commonly practiced, cannot be relied upon for disinfection of the sick-room and its contents, including bedding, furniture, infected clothing, etc., as is popularly believed.

When fumigation is practiced, it should precede the general washing with a disinfecting solution heretofore recommended. To ensure any results of value, it will be necessary to close the apartment to be disinfected as completely as possible by stopping all apertures through which the gas might escape, and to burn not less than three pounds of sulphur for each thousand cubic feet of air space in the room. To secure complete combustion of the sulphur, it should be placed in powder or in small fragments, in a shallow iron pan, which should be set on a couple of bricks in a tub partly filled with water, to guard against fire. The sulphur should be thoroughly moistened with alcohol before igniting it.

Disinfection of privy vaults, cesspools, etc. When the excreta (not previously disinfected) of patients with cholera or typhoid fever have been thrown into a privy vault, this is infected, and disinfection should be resorted to as soon as the fact is discovered, or whenever there is reasonable suspicion that such is the case. It will be advisable to take the same precautions with reference to privy vaults into which the excreta of yellow fever patients have been thrown, although we do not definitely know that this is infectious material.

For this purpose the standard solution of chloride of lime may be used in quantity proportioned to the amount of material to be disinfected, but where this is considerable it will scarcely be practicable to sterilize the whole mass. The liberal and repeated use of this solution, or of a 5 per cent. solution of carbolic acid will, however, disinfect the surface of the mass, and is especially to be recommended during the epidemic prevalence of typhoid fever or of cholera.

All exposed portions of the vault, and the wood-work above it, should be thoroughly washed down with the disinfecting solution. Instead of the disinfecting solutions recommended, chloride of lime in powder may be daily scattered over the contents of the privy vault.

Disinfection of ingesta. It is well established that cholera and typhoid fever are very frequently, and perhaps usually, transmitted through the medium of infected water or articles of food, and especially milk. Fortunately we have a simple means at hand for disinfecting such infected fluids. This consists in the application of heat. The boiling temperature maintained for half an

hour kills all known disease germs. So far as the germs of cholera, yellow fever, and diphtheria are concerned, there is good reason to believe that a temperature considerably below the boiling point of water will destroy them. But in order to keep on the safe side, it is best not to trust anything short of the boiling point (212° F.) when the object is to disinfect food or drink which is open to the suspicion of containing the germs of any infectious disease.

During the prevalence of an epidemic of cholera it is well to boil all the water for drinking purposes. After boiling, the water may be filtered, if necessary to remove sediment, and then cooled with pure ice if desired.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Novel Treatment of Meningitis—Chemistry for Pharmacists—A University for London—The Pasteur Treatment—Nephrorrhaphy for Movable Kidney—Ichthyol in Erysipelas.

Singular superstitions prevail in Paris, despite its claim to be the centre of modern civilization. A woman, whose child was suffering from meningitis, concluded to try an old-wives' remedy, and she accordingly allowed a pigeon to be killed on the little patient's head, in belief that the malady would be absorbed by the pigeon's flowing blood. The doctor in attendance learned, to his surprise, that the practice is by no means uncommon, and that one woman in the Halles sells on a daily average ten or twelve pigeons destined for this singular sacrifice.

From the address of Sir Henry Roscoe at the opening of the forty-seventh session of the School of Pharmacy, he mentioned that for skill and cunning in the discovery and preparation of "simples," the German pharmacist leaves his English brother really nowhere. Well might the President of this inaugural gathering ask why it is that so much more is done on the Continent than in England in the preparation of rare drugs and in the discovery of new ones, of artificial febrifuges and antipyretics, to say nothing of such interesting bodies as saccharin and other products of foreign science and skill. "It is simply," says Sir Henry, "because a more ample opportunity is given to him for the study of chemistry in its higher stages and in its application to pharmacy than has hitherto been accorded to us." It is consoling, however, to be assured that the Research Laboratory of the School of Pharmacy will do something to set this matter right.

The event of the past week has been the commencement of the winter session in the medical

schools. Up to the present the entrances of fresh students have been decidedly below the average of past years. Professor John Eric Erichsen, speaking at King's College, stated that King's College and University College had coöperated in furthering one of the noblest and greatest educational works ever propounded in London, viz.: the endeavor to establish, for the first time in the history of London, a University in and for London. A Royal Commission had been sitting for some months to consider the advisability of acceding to the petition of the two Colleges for the proposed new University. There was a great deal of misapprehension in the public mind as to the proposed Albert University. The sons and daughters of Londoners suffered much from the difficulty of obtaining a thorough university education in the metropolis, and it was now necessary for them to go to distant institutions in pursuit of such an education. But both King's College and University College possessed every requisite for that system of university education. Taking their size, wealth and endowments, and their general position as educational establishments, the governing bodies of the colleges felt that they were fully justified in petitioning that University rank might be conferred upon them. If the petition were granted, and if University rank were granted to the two Colleges, in connection especially with the medical schools of London, they would be able to start at once with a body of undergraduates more numerous than that possessed by any University in the United Kingdom. It would number something like 2,000 or, if those who would come in from other medical schools were included, the number would be considerably over 3,000. The medical profession was, the Professor said in conclusion, the Republic of Medicine in this sense—that there was no hereditary road to it, and there was no privileged class in it. Every position in it was open to all men who had the ability to aspire to and the will to seize it.

Detractors of Professor Pasteur are attaching great importance to the case of a young man who has just died of hydrophobia twenty-seven months after the completion of the Pasteur treatment. The deceased, a farmer 26 years of age, was bitten by a mad dog in the month of May, 1886, in the little finger of the right hand. On the tip of the finger there were three wounds, which were in the first place cauterized with a red-hot iron—this precaution, however, not being taken until two or three days after the accident. Soon afterwards the farmer came to Paris, presented himself at the Pasteur laboratory and underwent the usual course of treatment. He returned home and enjoyed his usual health until the summer of the present year, when he caught a slight cold and complained of pain in the bitten finger. The pain rapidly extended to the arm, the shoulder and the right side, and a day or two subsequently he became

convulsive and was removed to a hospital, where he died with all the usual symptoms of rabies. The conclusion M. Pasteur's adversaries draw from this case is that the eminent Professor's system offers no guarantee against the terrible consequences that may attend the bite of a mad dog. Probably, however, M. Pasteur will have something to say respecting the case referred to which will give it another aspect.

Mr. Gould has recently, at the Middlesex Hospital, successfully performed the operation of fixing a movable kidney. Mr. Gould considers the mode of passing the suture of great importance. Instead of making a large curved needle, such as is usually employed, carry the suture at a single sweep through the organ and lumbar aponeurosis, he prefers first to pass the suture through the kidney, taking up as broad a piece of its capsule and cortex as possible, and then to pass each end of the suture through its corresponding portion of the lumbar aponeurosis. Two sutures passed in this manner are found sufficient to hold the kidney firmly, and if they are tied carefully, the chance of their cutting out through the kidney, and so not holding it so securely as desired, are reduced to a minimum. A subsidiary advantage of the buried suture is that the wound can be closed smoothly and accurately by the ordinary sutures. When the kidney is fixed by external sutures they pucker the wound and interfere with the most rapid and perfect healing. As to the material of the deep sutures, Mr. Gould considers silk, as being more durable than gut or tendon, would be preferable, were it not that it is more difficult to render absolutely aseptic than is kangaroo tendon. That, at any rate, is his experience; and the tendon has answered so well in his hands as a ligature in ovariectomy and as a suture in the radical cure of hernia, that he uses it with full confidence.

Ichthyol for erysipelas has been successful in the hands of some medical men. It is used in combination with ether, 10 parts of each in 180 parts of collodion, as a local application. An ointment composed of equal parts of ichthyol and vaseline has also been successfully employed.

DOMESTIC CORRESPONDENCE.

Monstrosities and Mental Impressions.

Dear Sir:—The article in *THE JOURNAL* of October 13th reminds us that for ages woman has been tortured with fears and anxieties created by those who should be her shield and strength. Hardly a woman since Satan

"Squat like a toad close at the ear of Eve,
Assaying by his devilish arts to reach
The organs of her fancy,"

has gone through her pregnancy without experi-

encing an impression far more potent than catching a frog instead of a fish. If by any law her fears, and hopes, and desires could change the form of her unborn child, the race would long ago have been transformed to beasts and birds and creeping things. The "ring-streaked, speckled and spotted" results of Jacob's experiments on Laban's ewes would be nothing to the markings of mankind, and we might well question the wisdom of the All Wise, as well as the power of Him who ordained "each after his kind." But from the myriad impressions, powerful impressions, made upon expectant mothers, how many leave "mother's marks," and how many mother's marks conform to any given impression? What physician has not been consulted about such impressions, and who has not had cases corresponding with this? The husband of Mrs. —, in a playful mood, brought from the barn a handful of hairless young rats, and saying to his young wife, a few weeks advanced in her first pregnancy, "Here, my dear," emptied them into her extended hands. She dropped them upon the floor and shudderingly exclaimed, "My baby will look like those things." She believed in her power to impress the child. The fear tortured her through the long months of pregnancy, and when the babe was born her first question was "Does it look like a rat?" It is hardly necessary to say it did not. Or who has not had experiences like this: The child was horn, and the good ladies in attendance asked "What did you see? No? Why you must have seen something." And so they strove to find the impression that caused spina bifida. Or the child is born with an anastomotic aneurism on the head, and after many questions and cross-questions about cherries and strawberries and plums the mother at last remembers that she longed for plums.

We have seen many and various "marks" and deformities, but none that conformed any more nearly to a given idea in the mother's mind than the horse's mane in Nelligan's plates on skin diseases, or Dr. Jessup's frog; and if mothers can't do better than these examples they may as well give up mental impression art.

Let us glance a moment at the logic of what might only cause a smile if it was not the source of painful anxiety in those we love. When an ovarian becomes an embryonic cell it is a new life and differentiates and proliferates other cells in harmony with its individuality. Henceforward it appropriates whatever it receives, whether from the mother's blood or breast, from cow or cook, in accordance with the laws of its own organism, and the mother has no more power through a mental impression upon her blood or milk to make its development conform to a given idea than the cow or the cook. She may, through the undue exercise of the emotions, through improper diet or disease poison the food she provides, but that is

the extent of her power. When it has entered another organism it is beyond her control. She cannot by any mental impression cause a mal-development in her own body conforming to a given idea. Much less can she produce such a result in another, however closely related to her.

Are we pointed to wonderful experiences and asked to account for them? Experience and mysticism prove anything from the cures of homœopathic dynamizations and "Christian Scientists," to "mother's marks." But as with the nostrum vender, their proof lies in advertising exceptional results, and forgetting alike the great body of facts and physiological, pathological and therapeutic principles.

The head of the foetus, being its heaviest part, ordinarily lies next the vagina. Plums, cherries, etc., are usually found about the head and shoulders. If elsewhere, note if the child had not some other presentation. A slight *punch* is sufficient in early foetal life to cause an anastomotic aneurism or other *mark*.

In 1885 we waited on Mrs. —. The baby had no forehead. The top of the head was flat and covered with bony nodules. The expression of the child was idiotic, and its limbs imperfectly developed. We saw in the expression and the imperfect development sequents of an injured and undeveloped brain. We did not inquire about mental impressions but had a history of libidinous connection that produced the conviction that quite another kind of impression had caused what we saw.

We know that some malformations are considered violations of all law—a law unto themselves. If so, we cannot account for their deformities. But, can there be any effect without an efficient cause? Our profession and humanity demands that we seek such cause and strive to quiet the cruel fears of those who bear the curse "In sorrow thou shalt bring forth children."

W. L. SCHENCK, M.D.

Osage City, Kansas, Oct. 16, 1888.

MISCELLANEOUS.

AMERICAN PUBLIC HEALTH ASSOCIATION.—The Sixteenth Annual Meeting of the American Public Health Association will be held in Milwaukee, Wis., on Tuesday, Wednesday, Thursday and Friday, November 20, 21, 22, 23, 1888, at the Atheneum Hall, commencing at 10 A. M. Reduced R. R. rates can be secured from all sections of the country on the certificate plan. Papers and reports have been announced as follows:

The President's Address.

"The History and Administration of Quarantine in Texas, 1878 to 1888."—By R. Rutherford M.D., State Health Officer of Texas.

"The Canadian System of Maritime Sanitation."—By F. Montizambert, M.D., Quarantine Officer at Grosse Isle, St. Lawrence River.

"Yellow Fever: Panics and Useless Quarantines—its

Limitation by Temperature."—By John H. Rauch, M.D., Secretary of the State Board of Health of Illinois.

"The Organization of the National Health Service."—By Henry P. Walcott, M.D., President State Board of Health of Massachusetts.

"State Boards of Health."—By Ezra M. Hunt, M.D., Secretary of State Board of Health of New Jersey.

"The Difficulties and Success of the Public Health Service in Large Cities."—By Oscar C. DeWolf, M.D., Health Commissioner of Chicago.

"Ontario Sanitary Legislation, its Strength and its Weakness."—By John Coventry, M.D., Medical Health Officer of Windsor, Ontario, Canada.

"The Destruction of Organic Matter by Fire as a Sanitary Measure—Garbage Furnaces."—By S. S. Kilvington, M.D., President of the Board of Health of Minneapolis.

"Vaccination as a Protection from the Infection of Small-Pox."—By D. W. Hand, M.D., President of the State Board of Health of Minnesota.

"Tuberculosis, its Origin, Detection, and Control."—By D. E. Salmon, D.V.M., Chief of the Bureau of Animal Industry, Washington.

"Veterinary Sanitary Work in Wisconsin, with Special Reference to Diseases Communicable to Man."—By V. T. Atkinson, D.V.M., State Veterinarian of Wisconsin.

"The Relations of Bacteriology to the Discovery and Prevention of Causes of Infectious Diseases among Men and Animals."—By Theobald Smith, M.D., of the Bacteriological Laboratory of the Bureau of Animal Industry, Washington.

"Popular and Scholastic Education in Hygiene."—By J. T. Reeve, M.D., Secretary State Board of Health of Wisconsin.

"Remarks on the Classification of Diseases."—By Henry B. Baker, M.D., Secretary of the Michigan State Board of Health.

"Meteorological Observations as Respects Disease Prevalence."—By Prof. Payne, Director of Observatory, Northfield, Minn.

"Some Personal Observations on Yellow Fever and its Habitudes as Opposed to the Fallacies and Dangers of Personal Quarantine."—By A. N. Bell, M.D., Brooklyn, N. Y.

Valuable reports have been promised from several of the committees. Arrangements have been made for the use of the stereopticon by any who desire to avail themselves of it in illustrating papers presented, as has already been announced by circular from the president's office.

WASHINGTON OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—At the annual business meeting held October 19, 1888, the following officers were elected for the ensuing term:

Joseph Taber Johnson, M.D., President; D. Webster Prentiss, M.D., and W. W. Johnston, M.D., Vice-Presidents; George Byrd Harrison, M.D., Treasurer; Samuel S. Adams, M.D., Recording Secretary; G. Wythe Cook, M.D., Corresponding Secretary.

AMERICAN ACADEMY OF MEDICINE.—The American Academy of Medicine will hold its next annual meeting at the New York Hospital, on Tuesday and Wednesday, November 13 and 14. Papers will be read by Drs. H. I. Bowditch, of Boston; Theophilus Parvin, of Philadelphia; Leartus Connor, of Detroit; L. D. Bulkley, of New York; J. C. Wilson, of Philadelphia; E. Andrews, of Chicago; Geo. J. Fisher, of Singing, N. Y.; C. C. Bombaugh, of Baltimore; R. L. Sibbet, of Carlisle, Pa.; W. F. Waugh, of Philadelphia; and the President's Address, by Dr. F. H. Gerrish, of Portland, Maine.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from October 20, 1888, to October 26, 1888.

Col. Charles Page, Asst. Surgeon-General, Medical Director of the Department, will proceed to and inspect the

Medical Department at Fts. Ellis, Tex.; Supply, Reno, Sill and Gibson, I. T.; Ft. Leavenworth, Kan., and the Leavenworth Military Prison, in the order named, and upon completion of this duty return to these Hdqrs. Par. 1, S. O. 127, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., October 15, 1888.

Major William D. Wolverton, Surgeon, is relieved from duty at Ft. D. A. Russell, Wyo. Ter., and will report in person to the commanding officer, Ft. Douglas, U. T., for duty at that post. Par. 16, S. O. 248, Hdqrs. of the Army, A. G. O., Washington, October 24, 1888.

Major William H. Forwood, Surgeon U. S. Army, Ft. Snelling, Minn., is granted leave of absence for one month, on surgeon's certificate of disability. S. O. 100, Hdqrs. Dept. of Dak., St. Paul, Minn., October 20, 1888.

PROMOTION.

Capt. Leonard Y. Loring, Asst. Surgeon, to be Surgeon, with the rank of Major, October 9, 1888, vice Meacham, deceased.

Capt. Paul R. Brown, Asst. Surgeon, is relieved from duty at Ft. Sidney, Neb., and will report in person to the commanding officer, Ft. D. A. Russell, Wyo. Ter., for duty at that post. Par. 16, S. O. 248, Hdqrs. of the Army, A. G. O., Washington, October 24, 1888.

Major John W. Williams, Surgeon, leave of absence granted in S. O. 209, October 4, 1888, is extended one month, by direction of the Secretary of War. Par. 14, S. O. 246, A. G. O., October 22, 1888.

Capt. Edward C. Carter, Asst. Surgeon, granted leave of absence for one month, by direction of the Secretary of War, to take effect on the completion of his present duties. Par. 13, S. O. 246, A. G. O., October 22, 1888.

By direction of the Secretary of War, First Lieut. William C. Borden, Asst. Surgeon, is relieved from duty at San Antonio, Tex., and will report in person to the commanding officer, Ft. Ringgold, Tex., for duty at that post. Par. 11, S. O. 247, A. G. O., Washington, October 23, 1888.

First Lieut. R. R. Ball, Asst. Surgeon U. S. Army, granted leave of absence for one month, with permission to apply for an extension of one month. Par. 3, S. O. 129, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., October 18, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending October 27, 1888.

P. A. Surgeon Howard Smith, detached from the "Wabash" and granted six months' leave, with permission to leave the United States

Asst. Surgeon E. W. Auzal, ordered for examination preliminary to promotion to P. A. Surgeon.

Asst. Surgeon F. W. F. Wieber, ordered for examination preliminary to promotion to P. A. Surgeon.

Asst. Surgeon E. W. Auzal, after examination, detached from Naval Academy and to Navy Yard, New York.

Asst. Surgeon J. F. Uric, detached from the "Franklin" and to Coast Survey Str. "Gedney."

Asst. Surgeon Thos. Owens, detached from Coast Survey Str. "Gedney," and to Coast Survey Str. "Blake."

Asst. Surgeon F. A. Berryhill, detached from Coast Survey Str. "Blake" and to Naval Academy.

Asst. Surgeon A. N. T. Harris, detached from Naval Hospital, Mare Island, Cal., and wait orders.

P. A. Surgeon John H. Hall, detached from the "Monongahela" and wait orders."

P. A. Surgeon M. A. Crawford, detached from the "Vandalia" and to the "Monongahela."

CORRIGENDA.

TREATMENT OF SACRO-ILIAC TUBERCULOSIS.

Dear Sir:—Will you kindly correct, in a note in your next number, the statement in my article of October 20, 1888, page 553, that Prof. Sayre's first operation-case was not previously published? I am advised that it was published in the *Medical Record*, of New York, Feb. 6, 1879.

Very sincerely,
WELLER VANHOOK,
884 W. Madison St., Chicago.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, NOVEMBER 10, 1888.

No. 19.

ORIGINAL ARTICLES.

THE RADICAL CURE OF VARICOCELE, ATTENDED WITH REDUNDANCY OF SCROTUM, DEMONSTRATED BY TIME.

Announced—but not read—before the Section on Surgery, at the Thirtieth Annual Meeting of the American Medical Association, May, 1888.

BY MORRIS H. HENRY, M.A., M.D., LL.D.,

OFFICER OF THE ROYAL ORDER OF THE SAVIOR, OF GREECE; COMMANDER OF THE IMPERIAL ORDERS OF THE MEDJIDIE AND OF L'OSMANIE, OF TURKEY; FORMERLY SURGEON-IN-CHIEF OF THE STATE EMIGRANT HOSPITALS OF NEW YORK, ETC.

The surgical treatment of varicocele has attracted the attention of many distinguished surgeons of the day—mainly, however, among those who devote more or less especial attention to diseases of the genito-urinary organs. All surgical operations are performed for the relief or cure of disease, whether it be of an acute or chronic nature, and time alone can demonstrate the true value of any special surgical procedure.

The impression still prevails, among many of what might be termed the older surgeons, that varicocele is a disease that does not often call for surgical interference, because it can be borne by many suffering from the disease—to a limited extent—with the aid of a suspensory bandage or a flexible metal ring. In conversations with a number of those entertaining or expressing these views I am led to believe that the fear of bad results, or failure in the ligation of the veins, is the source of their impressions and their aversion to any surgical interference. I believe that non-interference may, in many instances, be of greater benefit to the patient than ligation of the veins. Every surgeon knows of the uncertainty of this operation—not only of its failure to cure, but the risk of inducing atrophy of the testes, and the excitation of inflammation to the extent of danger to life. The only argument, deserving consideration, offered by those who advocate non-interference is, that in a large number of cases the disease is not a real source of physical disability, and can be borne without much discomfort with the aid of a bandage, just as a hernia can be endured with the assistance of a truss. Sir James Paget, one of the oldest and most distinguished of living surgeons, expressed these views to me in a conversation I had with him about three years ago. He re-

marked, however, that he had retired from the field of operative surgery and had become very conservative in his views; and that, except in cases of those who desired to enter or remain in the public service, army and navy, or in positions requiring physical endurance, he was averse to any surgical interference. When I suggested that surgical aid was justified to relieve the annoyances, distress, pain and mental anxieties, the only answer that he made was: "Well, only an absolute physical disability would induce me to sanction an operation looking to the obliteration of the spermatic veins. I have never performed excision of the redundant scrotum; while it is less dangerous, I shall not have an opportunity of testing its merits. As I have already said, I have retired from operative surgery."

My purpose is not to call especial attention to the physical and other disabilities induced by the presence of even slight cases of varicocele; but to advocate, to the fullest extent of my ability, the advantages of excision of the redundant scrotum over all other methods hitherto pursued for its relief and cure.

My convictions and conclusions are based on the results of a large experience, and of extraordinary opportunities of physical examinations, covering a period of more than twenty-five years. While pursuing my own clinical observations I have not been unmindful of the labors of my colleagues, nor less watchful of the result of their cases than of my own—that is, as far as opportunities have been afforded.

The honor of the first suggestion of the operation is due to Sir Astley Cooper. He published, in his classic volume on the structure and diseases of the testis, 1841, a report of five cases in which he operated, and an additional case, with some extraordinary features, submitted by his colleague, Mr. Key; who was also in favor of the operation and with a strong preference over that of ligation of the veins. There can be no doubt that the distrust of the value of ligations of the veins, amongst British surgeons, was due to the influence and teachings of the surgeons I have just mentioned. But the new operation did not meet with any great amount of favor, owing to the fear of severe hæmorrhage in its performance, and the permanency of benefit as a final result.

The German surgeons paid little or no heed to it, and the French surgeons became absorbed in the gradual constriction of the veins, leading to their obliteration, suggested by the brilliant Ricord. Curling, who has been for many years, and is still to a great extent, the British Mentor in this department of surgery, has ignored the operation, but with no additional reason to sustain his objections.

My own first practical knowledge of the operation—over thirty years ago, and while yet an undergraduate—was in being accidentally asked to assist the late distinguished and erratic Edward H. Dixon, an alumnus of the College of Physicians and Surgeons, of New York, who performed the operation on a young lawyer. That operation was not a success. The failure was due to the method of operation, and the method was faulty owing to the want of proper instruments for the performance. But to Dixon must be accorded the credit of first calling attention to the operation in this country. I am fully sustained in this view by the testimony of the oldest member of the firm of Tiemann & Co., the celebrated instrument-makers; the origin of the firm antedating the period of Sir Astley Cooper's first publication on this subject. I have examined patterns of all the instruments they have made, and heard of the many embryonic efforts of others that never fulfilled a period of gestation. Dixon's instrument consisted of two curved steel bars about 4 inches in length and $\frac{1}{4}$ inch in thickness, perforated at each end for the introduction of screws to hold the bars together when embracing the tissues to be removed. It was a failure. Many attempts have been made by others, within the past few years, to revive this same instrument on account of its cheapness, and the ulterior purpose of associating their names with the operation. Their efforts and so-called "modifications"—a term of license to take unpardonable liberties with other men's inventions—have attracted little or no attention.

My first studies of the nature and best means for the relief of varicocele commenced in 1857. I first published the results of my experience and observations in 1871. I gave a detailed account of my method of operating; illustrations of my instruments; the *rationale* of the operation and the results. They are too well known to need any further recital before this Association. While my report met with unusual and not unfavorable attention, it was still urged that obliteration of the veins alone afforded a radical cure. The phantasm of dangerous hæmorrhage attending the operation was dispelled on examination of my instruments and method of operating, but the cloud of "fear of lasting benefit" still remained. Gross, Agnew, Ashurst, Barton, Levis, Hammond, Hutchinson, Van Buren, Keyes, Bumstead, Taylor, Otis, Bangs, Weir, Bull, Abbe and McBurney have publicly attested their appreciation of my in-

struments and method. Still, further time was asked ere a verdict should be rendered in accordance with my appeal. I waited eleven years, until 1881. I then told, before the New York Academy of Medicine and the Academy of Surgery, of Philadelphia, of my experiences. In my account of fifteen cases recorded up to that time I had met with uniform success. The cases ranged between the ages of 19 and 45, and the operations aged between one and thirteen years. Is any further evidence essential to demonstrate that there is a limit to the elasticity of the scrotum; or the resiliency of the coats of the veins under favoring circumstances; or a lessening of the enlargement under a decrease of force and shortening of the column of blood of the spermatic vessels?

I have performed the operation fifty-nine times. In four instances hydrocele existed as a complication. They have all made radical cures as far as I can learn. I have made more than ordinary efforts to obtain information of the results up to this period. The time allotted to me will not permit of details of cases; I can only give general results. Surely cases operated upon ten or more years ago; showing now no more existence of former varicoceles, are a refutation of the objection to complete excision of the redundant scrotum for the permanent relief and cure of varicocele.

It is now generally performed, either with or without ligation of the veins, in most of the hospitals in this country. In most of the advanced works on surgery it has received recognition. Bumstead and Taylor not only admitted the value of my instruments but described my operation and advocated its adoption. Van Buren admitted to me the possibility of its becoming "the operation." Keyes, in the recent revised edition of their joint work, admits it, and speaks of my "clamp" as an "admirable one." Otis is decidedly in favor of it. Mr. H. Royes Bell, who contributed to the "International Encyclopædia of Surgery," describes the operation but, from want of knowledge of what has been done, is still fearful of the permanency of good results. In France, Edward Wickham has published an admirable brochure: "De la cure radicale du Varicocele par la résection du scrotum," dedicated to Guyon and Horteloup, in which he describes the results of the operation, and belief in the permanency of the results. He has changed somewhat the curve of my clamp, but accords me credit for my observations and operations, and the part I have taken in bringing the subject before the profession.

It is now before you, gentlemen of the Section of Surgery. I have endeavored, in the short time allotted to me, to give you the salient points of my impressions and knowledge obtained from clinical experience. I know that, should you adopt my suggestions, no lesser benefits will result from your operations than from mine.

581 Fifth Ave., New York.

MALARIA; AND THE CAUSATION OF PERIODIC FEVER.

Read in the Section on State Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY HENRY B. BAKER, M.D.,
OF LANSING, MICH.

Periodicity characterizes most and perhaps all physiological changes: The normal contraction and relaxation of muscles, and of protoplasm, the pulsation of the heart, the rhythmic respiratory movements, the periodical sleep during the night, action and repose are the rule, and this applies to thought and other nervous energy. Strongly-marked liberations of vital force occur only after a period of non-action has permitted the storing up of energy, which energy when once strongly and thoroughly discharged cannot immediately be followed by another similar discharge, for which time and opportunity for the accumulation of energy in dischargeable form is requisite.

A periodic fever has, in the fact of its periodicity, a very strong indication that it is necessarily related to periodic changes in the patient, or in those environments of the patient which influence physiological periodicity. Periodic fever is most frequently associated with those diurnal changes in the environment which are known to be associated with diurnal changes in human beings; rest and sleep during the night, and action during the day, are the rule; and periodic fevers usually recur daily or in multiples of days.

The tension of the blood-vessels is in great part controlled by nerves which have been called vaso-motor nerves; and although these may not be controlled by the will, impressions on sensory nerves, and movements started by volition are capable of influencing the vaso-motor nerves, and the calibre and tonicity of blood-vessels. In my opinion these facts have important relation to periodic fever, and especially to chills and fever; because, it is well known that chill and subsequent fever not infrequently follow impressions which are purely mental. A "nervous chill" thus caused has probably come under the notice of most observant medical practitioners. The chill which not infrequently follows childbirth is also well-known, but has other factors than mental or volitional impressions, because involuntary muscular contractions also have occurred.

The common phenomena of reaction from chill, if the chill is of considerable severity, include fever. In periodic fever—"fever and ague" (which term should be transposed, because the chill uniformly precedes the fever which is apparent) if the chill is accounted for, the fever seems to be explicable as the reaction from the chill, especially as the fever is comparatively ephemeral, it soon disappears, as it should do if reactionary only, and it only reappears after an-

other chill; that is to say each recurring fever has the same cause, that cause being the chill. If this view of the case is correct, what has to be accounted for, then, is the chill, and its periodical recurrence.

The time of day when the ague chill most frequently occurs, and the circumstances under which "nervous chills" occur, are facts which should aid our search for the essential conditions. I believe the ague chill is most frequent about noon, or not far from the warmest part of the day. My tables and diagrams show that there is also most intermittent fever in the warmest months of the year. It is generally conceded that there is most intermittent fever in the hot climates. High temperature of the atmosphere then, is the most important element in the causation of ague—intermittent fever. Whether the causation is direct or indirect is an interesting question. There are facts to be presented, further on in this paper, going to show that the influence of high temperature is, to some extent, indirect—through difference in the day and night temperatures. One alleged fact of this kind is that, in very malarious localities, exposure to the very high temperature on the low lands during the hottest part of the day does not cause the ague; but if one, thus exposed, remains on the low lands during the night, ague results, although the chill may not occur until the warmest part of the day. The great difference between the low lands and the high lands at night consists in the much lower temperature on the low lands.¹ The cold experienced at night is much the greatest on the lowlands. If the night exposure to cold has causative relation to ague, how is it to be explained? Why is it that the ague chill is not coincident with the chilling influence of the cool atmosphere?

Let us examine into the phenomena:

The ague chill comes at a time later than the experience of cold. The "nervous" chill comes after the experience of the mental or other constitutional disturbance. The chill after childbirth follows the strong muscular contractions. The chill following surgical operations is after the cessation of the extreme muscular and nervous tension. The general fact seems to be that so long as the stimulus continues unabated and the organism unexhausted the nervous chill does not occur; but it occurs after the unusual tension has ceased, or after the nervous system is exhausted. The disturbed and irregular nervous control of the body in ague chill would seem analagous to the twanging of a violin string, the tension of which has been lowered below its normal pitch. The vibrations are then irregular.

I submit tables and diagrams showing the rela-

¹ Experiments in Michigan, with registering thermometers, have proved that the difference is, frequently, great.

tions of intermittent fever to atmospheric temperature.

It being apparent that whether or not there is a specific cause of ague, intermittent fever is a disturbance of the nervous system, and is, directly or indirectly, controlled by atmospheric temperature, is there ready explanation of how atmospheric temperature can control intermittent fever, irrespective of a specific cause?

But first those who think that a specific micro-organism is capable of causing periodic chill and fever may be allowed to show how it is possible for such specific cause to act periodically, or to induce periodic effects, or to cause fever or chills. It is alleged to be proved by Dr. Bernardo Schiavuzzi, in Istria, Austria, that the *bacillus malarie*, described by Drs. Klebs and Tommassi Crudeli, "is found in the atmosphere of malarial places, and more abundant the higher the temperature of the atmosphere and of the ground, and that corresponding to this the intensity of the malaria rose, meanwhile in the atmosphere of places free from fever this bacillus is not found."² It is conceivable that this bacillus or some other may be inhaled, and that its products in the body may cause such an irritation or disturbance of the nervous system as we find in ague chill, and the periodical recurrence of the chill may be nearest the time of highest atmospheric temperature, because at that time the bacillus is alleged to be most abundant in the atmosphere inhaled. But this is not in accordance with the alleged fact which seems to be well attested by numerous observers, that exposure in malarious localities in the daytime is not so frequently followed by ague as exposure during the night. And, again, no one supposes that there is any bacillus or other microorganism concerned in the causation of nervous chill from mental or emotional disturbance, or of surgical chill, or of the chill following childbirth. These last-mentioned chills do not recur, but alternations of heat and cold day and night do recur, and tables of statistics which I have examined seem to prove that they are greatest in "malarious" regions, and slight in non-malarious regions, they are great in months preceding or when intermittent fever most occurs, and they are slight in months preceding or when that disease least occurs; and it would seem that in such periodical alternations of atmospheric temperature we must find sufficient cause for the production and for the periodic recurrence of ague.

HOW ATMOSPHERIC TEMPERATURE CHANGE MAY CAUSE "CHILL."

When a person is long exposed to cool night air, the abstraction of heat from the body is great, the demand for the production of heat is great.

The impress on the nervous system is strong. If one thus exposed is awake and observant, the sensations will be remembered as peculiar as well as unpleasant. If the air is not cold enough to induce immediate reaction, there is a gradually increasing nervous tension until, if the exposure is long enough, shivering occurs, that is, the normally equable nervous control of the muscular system is disturbed. If the nervous system is well-nourished, and the exposure is not extreme, the reactionary relaxation of the superficial blood-vessels, which generally occurs on the subsequent exposure to warmth, is not great, especially if the warmth is applied to the extremities of the body.

Under some circumstances, the nervous tension, due to an exposure to an atmosphere cold compared with what has recently been experienced, does not soon reach that stage where shivering occurs. Perhaps the shivering occurs soonest when the sensation of the chill is more local than general, and the most intense nervous tension without shivering is caused in those cases where the attention has been least called to the nervous disturbance, because the impress of the cold has been most gradual as well as general.³

Given, a case of intense nervous tonicities (due to impress of a cool atmosphere during the night) and consequent clonic contraction of the involuntary muscular tissue of the integument, what may occur on the experience of the day atmosphere, in warm weather? If the strong contractions on the surfaces of the body continue, and the production of heat goes on at the same rate, the heat-loss will be greatly lessened, and this will be beneficial so long as the temperature of the body remains not above the normal; but if after a time the temperature of the air inhaled becomes much warmer, the heat-loss through respiration is, consequently, much less, the internal body temperature may then become abnormally high, as is the case, I believe, in the cold stage of ague. The abnormally high internal temperature and the disturbed nervous control cause irregular muscular contractions, and the other subjective and objective phenomena of the chill; and, as is well known, these disturbances may be intensified on exposing the back of a person in this condition to the sun. The high temperature is caused (as I believe) by the continued tonicities of the muscular system of the integument, which does so much to regulate the heat-loss of the body, and which, under the circumstances I have described, has been greatly stimulated in such a *gradual* manner that immediate reaction did not occur; but when the reaction does finally occur, it is excessive and exhibits that heat of the surface which is recognized, by even non-professional persons, as "fever." The relaxation of the surfaces, brought

² Concerning Malaria in general, and particularly in Istria," Wiener Medizinische Presse, 1887, No. 52, page 1779-80.
Also letter, to the author of this paper, from Prof. Conrad Tommassi Crudeli, submitted to this meeting herewith.

³ See diagram and text relative to conditions in India.

about by this reaction, then proceeds until its maximum is reached in the sweating stage.

Thus we have, according to my view, a clear grasp of the manner in which a first paroxysm of ague is caused by exposure to changes in atmospheric temperature. Given such alternations in atmospheric temperature as will cause a first paroxysm of ague, the chances are greatly in favor of there being similar alternations on the day succeeding, or, if not on that day, in a day or two afterwards, especially if it chances to be at that season of the year when the difference between the day and night temperature tends to continue uniform; and the repetition of those conditions which caused the first paroxysm should cause a second, and a third, and so on continually so long as the cause is repeated until death, or until the nervous system, which controls the surfaces, gains such sensitiveness to those insidious changes in the atmospheric temperature that normal or appropriate reaction promptly occurs on the experience of exposure to such insidious changes.

This view explains why it is that quinine, strychnine, and those agents which have such influence on the tonicity of the muscles, voluntary and involuntary, especially those which like quinine, have strong influence on the involuntary muscular system, have such influence over ague. Strychnine, as is well-known, renders the nervous system particularly sensitive to external impressions; but its effects, in medicinal doses, are perhaps not so lasting as are those of quinine.

It is a common observation that persons who travel northward, or to a colder climate, where ague is comparatively rare, not infrequently have one or more paroxysms of chills and fever soon after the change.⁴ The common explanation is that they brought the disease with them in their systems. But this is not philosophic, because so long as they were at the South, to the temperature changes of which locality they were acclimated, they had no ague. The true explanation is that they were not acclimated to the temperature changes in the cooler region; the contractions of the surfaces, due to the tonic effects of the cooler climate, did not readily permit of the loss of any unusual body heat, such as would result from muscular exertions; the nervous centres suffered, and chill and fever resulted.

That persons not acclimated to a warm climate suffer from ague, is a still more well-known fact. It seems difficult to account for this by any other theory than the one which I am advocating; and by this theory it seems perfectly plain, because, in warm climates the daily fluctuations of temperature are so much greater than they are in temperate or cool climates; the demands upon

the heat-regulating nervous system are therefore correspondingly greater.

BLOOD CHANGES IN AGUE.

The evidence relative to the excessive formation of pigment by disintegration of the red blood-corpuscles, through internal congestions and the greatly varying constitution of the blood serum as regards water and salts, because of the excessive thirst and perspiration in ague, seems to have been omitted from this paper; but this reference to it may serve to suggest that, in the opinion of the writer, the evidence is in harmony with the other portions of this paper.

DAILY RANGE OF ATMOSPHERIC TEMPERATURE DETERMINES INTERMITTENT FEVER.

From time to time I have published⁵ evidence tending to prove that the prevalence of intermittent fever throughout the world is in proportion to the difference between the day and night temperature—the average daily range of temperature to which people are exposed.⁶

With this paper I submit tables and diagrams proving, as I think, that so far as relates to certain parts of the world, this general law is correct. It is true in Michigan. It is true of that part of this country occupied by the U. S. Armies during the late war of 1861-5. The tables and diagrams sustaining this last statement include a study of the months of occurrence of over half a million cases (542,009) of intermittent fever, a number so vast that even though only three years' time is covered there is extremely great probability that true averages have been reached. If you will study the diagram (No. 1.) you will see that the curve representing the cases of intermittent fever follows with great uniformity the curve for average daily range of atmospheric temperature. It follows it in such a manner as to demonstrate, I think, that there is a necessary relation; and taken in connection with what we know of the regulation of body temperature by nerves which are in necessary relation to, and which normally respond to changes in the atmospheric temperature, the diagram seems to demonstrate a relation of cause and effect between daily range of temperature and intermittent fever.

By the diagram it will be seen that so long as the daily range is increasing the number of cases under observation accumulate, perhaps because

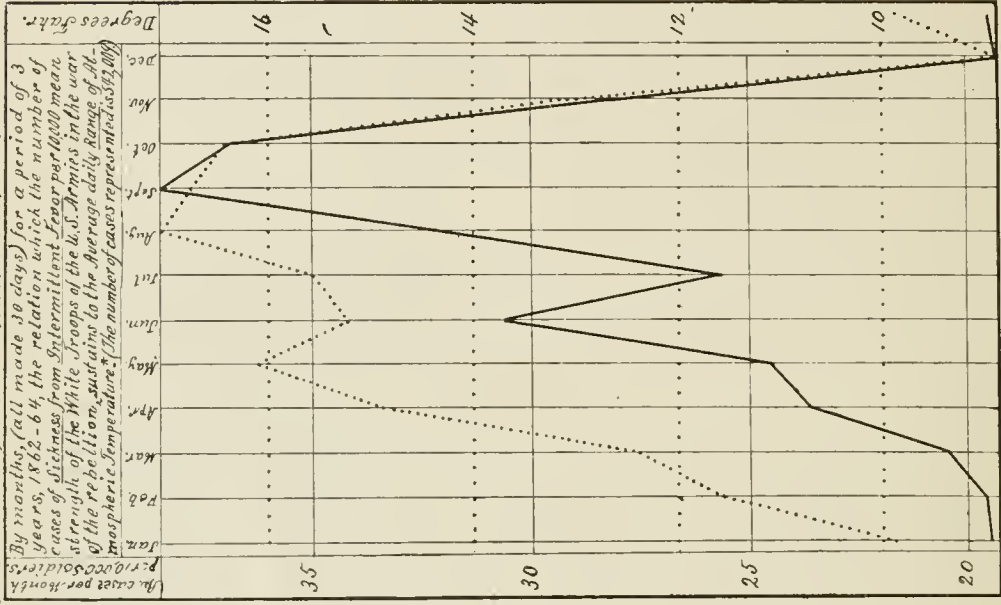
⁵ Reports of Michigan State Board of Health, especially for that of 1880, p. 318.

⁶ "It may be well to bear in mind in relation to this subject that intermittent fever is a disease of the warm season in this State, that it becomes more and more prevalent as we go south until in the extreme Southern States it is extremely common and severe, that the daily range of temperature is greatest in the warm months in this State, that it is greater in the warmer climates of the Southern States, that this is especially true on the lowlands, and that it is exposure during the day and during the night on the lowlands in the South which is believed to be so uniformly productive of chills and fever."

"If periodic chills and fever is produced or greatly favored by excessive periodic changes in the temperature of the atmosphere, then the reason is supplied why exposure on the hot lowlands during the day and return to the warm highlands at night is not so productive of ague as is exposure to the cold night-air of the lowlands." Page 318, Rep. Mich State Board of Health, 1880.

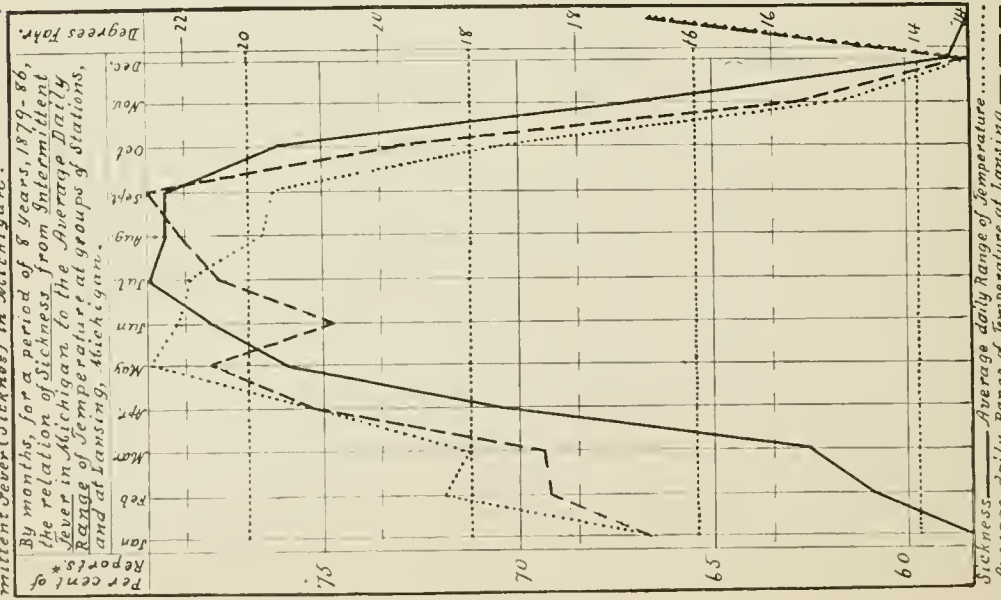
⁴ During the late war, I noticed this on a large scale after movements of troops from the South.

No. 1.-Range of Atmospheric Temperature, and Intermittent Fever (Sickness) in the United States Armies.



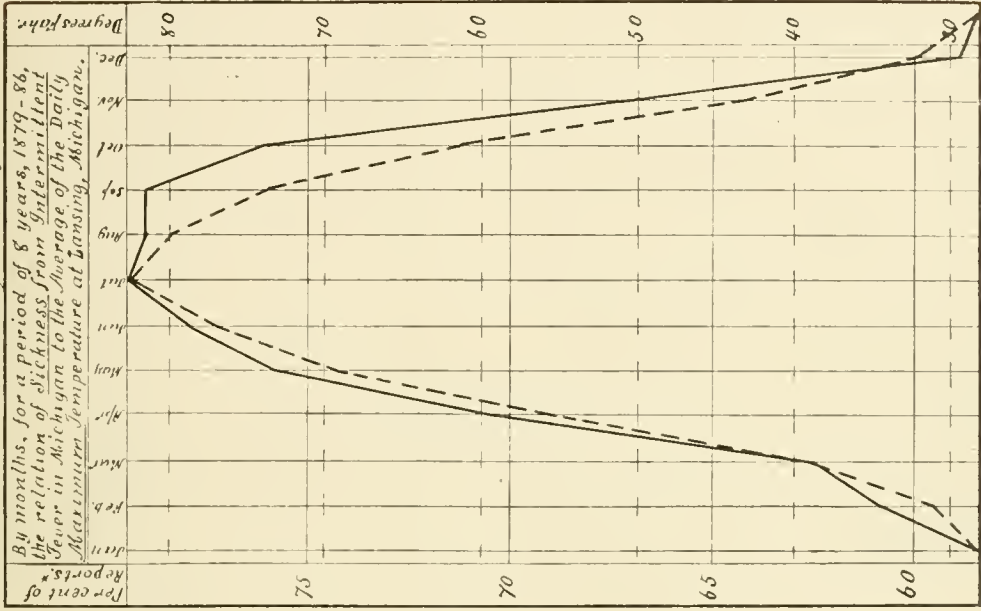
Sickness.—Average daily Range of Temperature.....
The sickness is compiled from the Medical and Surgical History of the War of the Rebellion. The range of temperature is compiled from a table on page 134 of the Smithsonian Tables Distribution and Variation of the Atmospheric Temp. in the U.S. It is for a period of 8 years, 1862-69, at Naval Observatory, Washington, D.C.

No. 2.—Range of Atmospheric Temperature, and Intermittent Fever (Sickness) in Michigan.



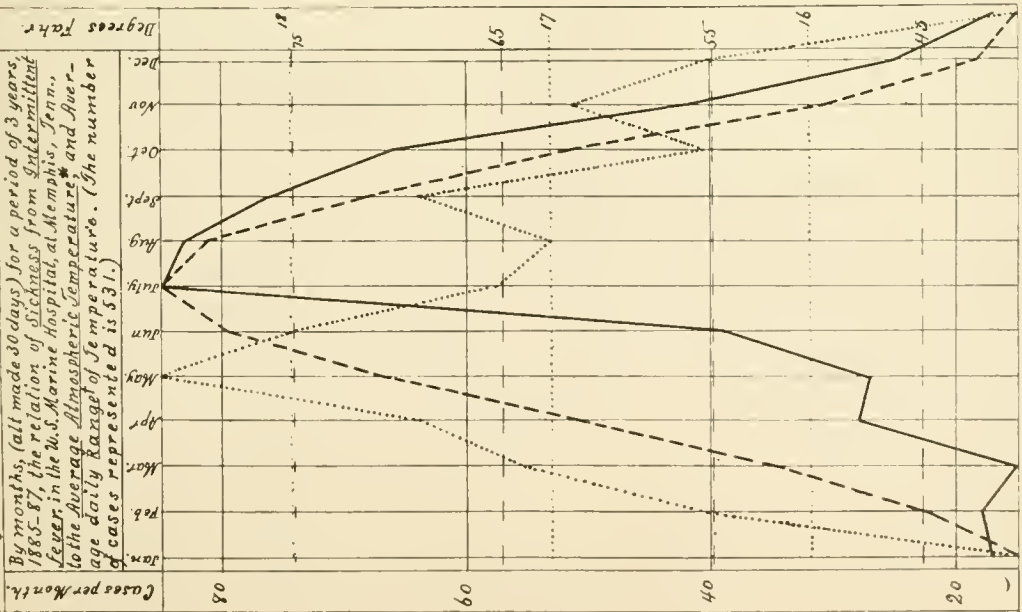
Sickness.—Average daily Range of Temperature.....
Average daily Range of Temperature at Lansing.....
Indicating what per cent of all reports received stated the presence of Intermittent Fever then under the observation of the physicians reporting.
Over 35000 weekly reports of Sickness, are represented in this diagram.

No. 3.—MAXIMUM Atmospheric Temperature and Intermittent Fever (Sickness) in Michigan.



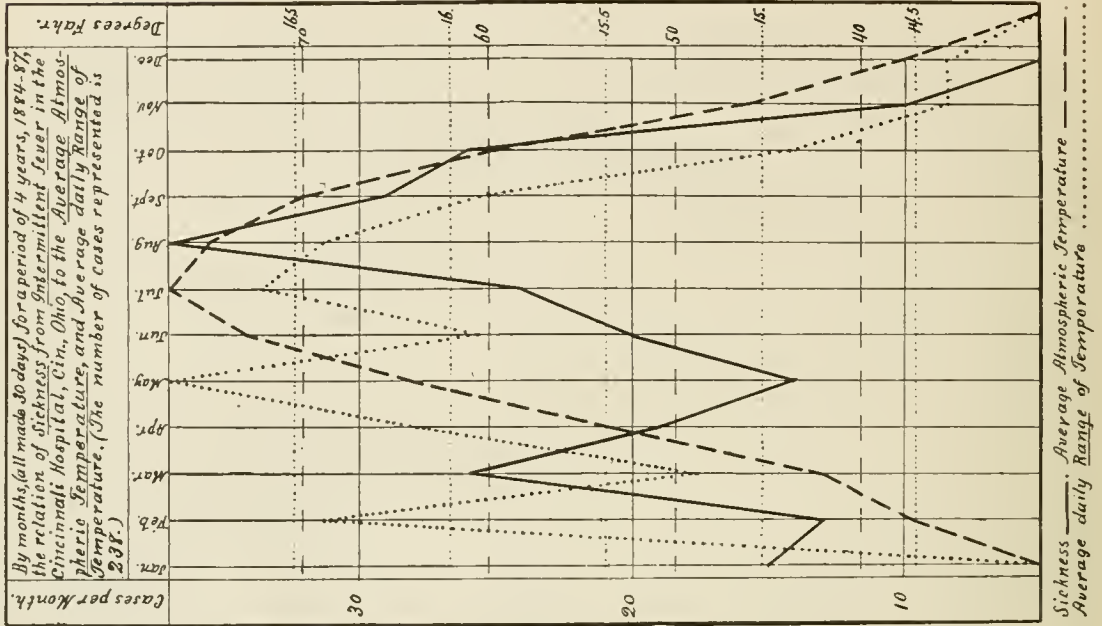
Sickness ———. Average maximum temperature ———. *Indicating what per cent of all reports received, stated the presence of Intermittent Fever then under the observation of the physicians reporting. Over 35000 Weekly reports of sickness are represented in this diagram.

No. 4.—Atmospheric Temperature, and Range of Temp., and Intermittent Fever (Sickness), Memphis, Tenn.

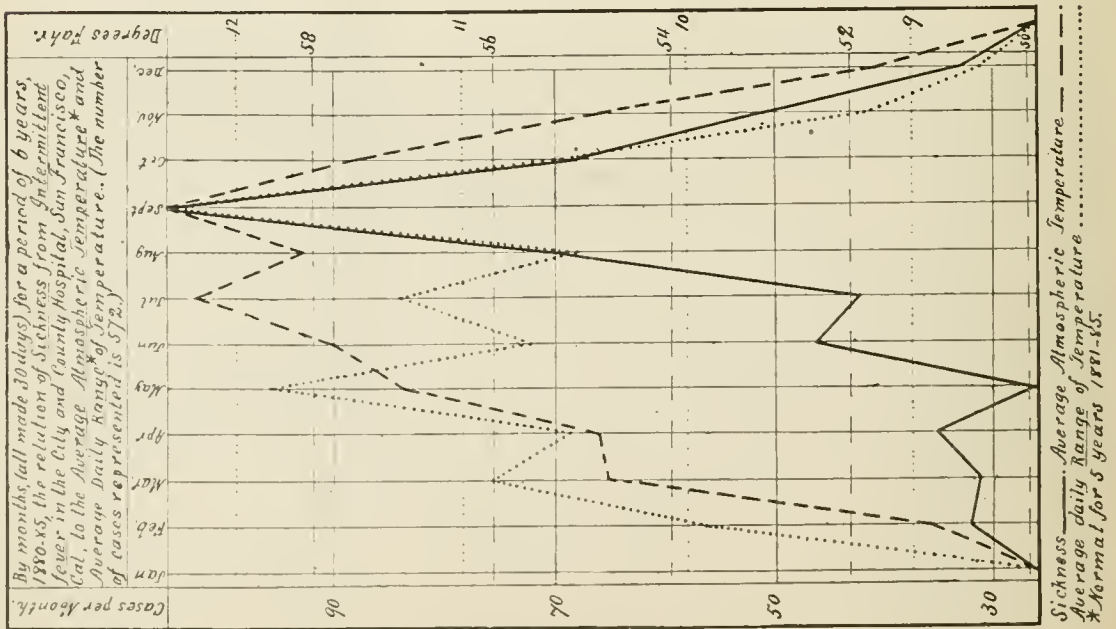


Sickness ———. Average atmospheric temperature ———. Average daily Range of Temperature ———. *Normal for 15 years, 1871-85. Normal for 5 years, 1881-85.

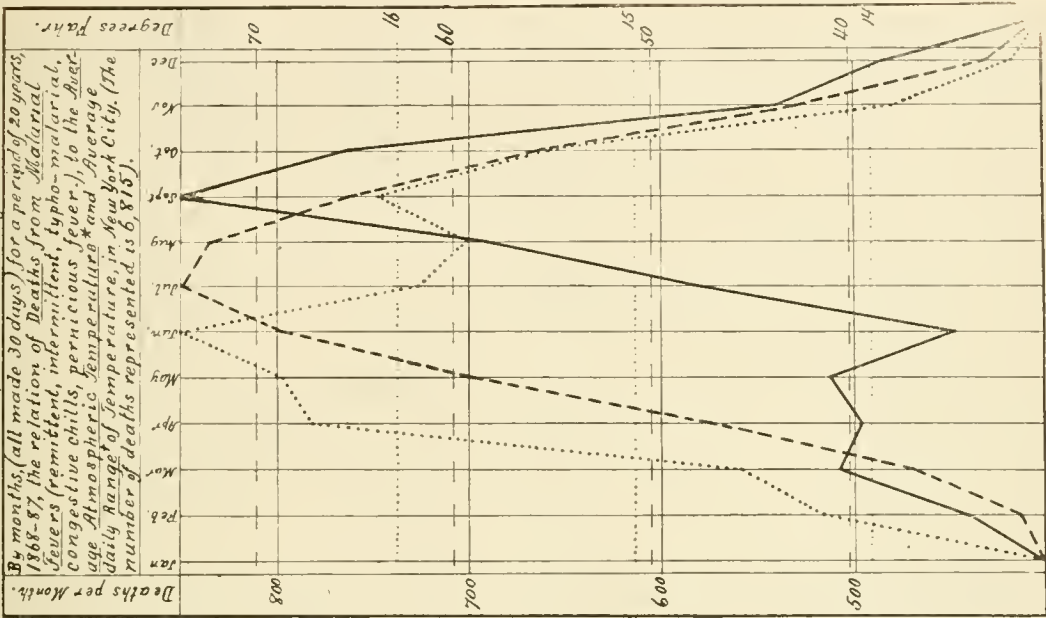
No. 5.—Atmospheric Temperature, and Range of Temp., and Intermittent Fever (Sickness) Cincinnati, Ohio.



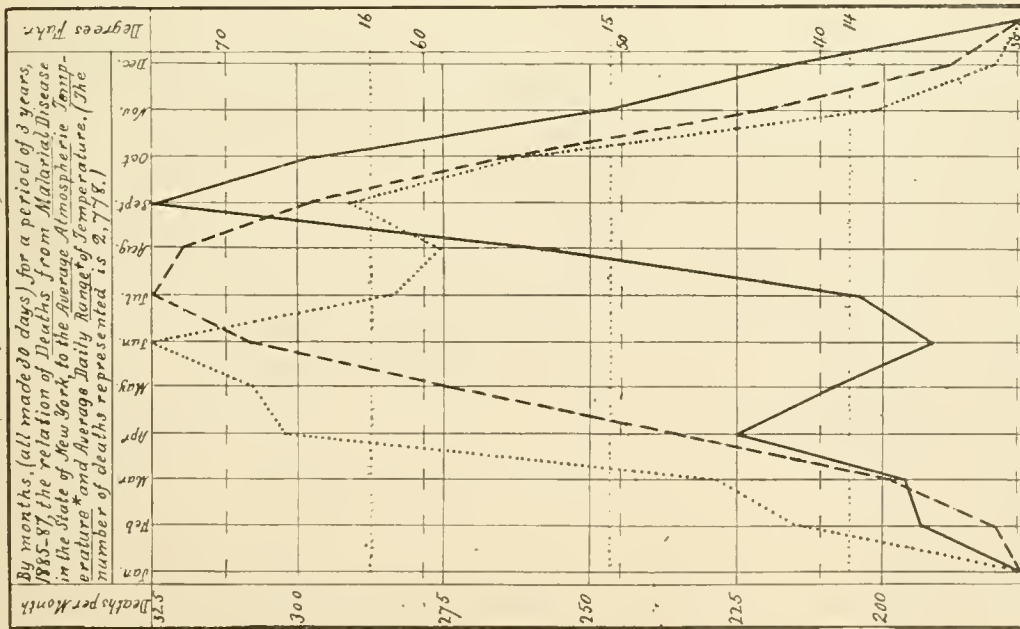
No. 6.—Atmospheric Temperature and Range of Temp. and Intermittent Fever (Sickness) San Francisco, Cal.



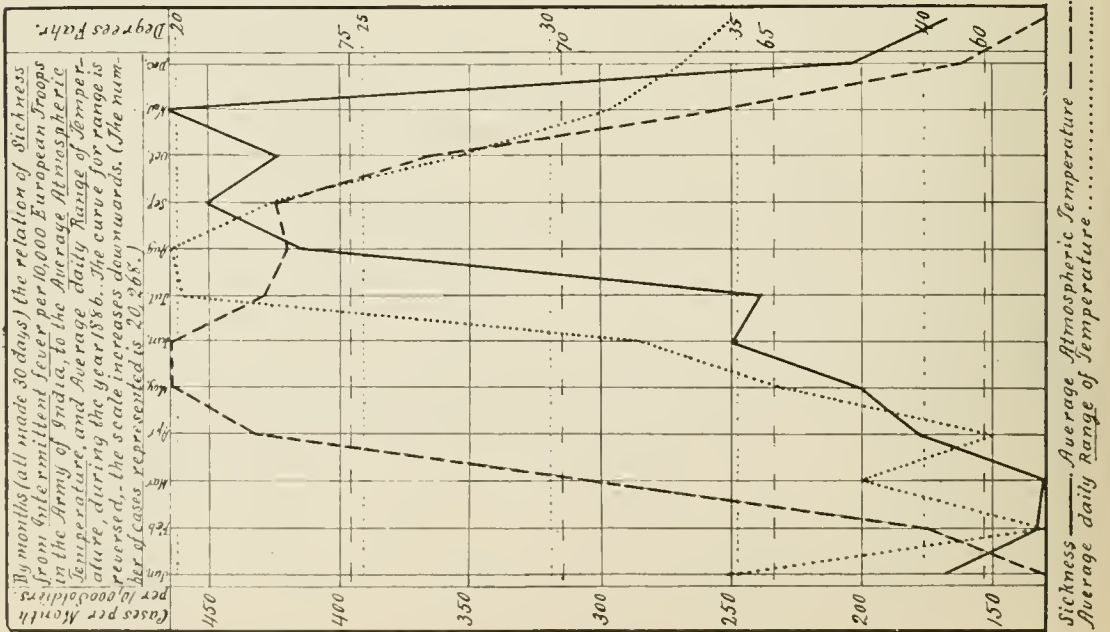
No. 7.—Atmospheric Temperature and Range of Temp. and Malarial Fevers (Deaths) in New York City.



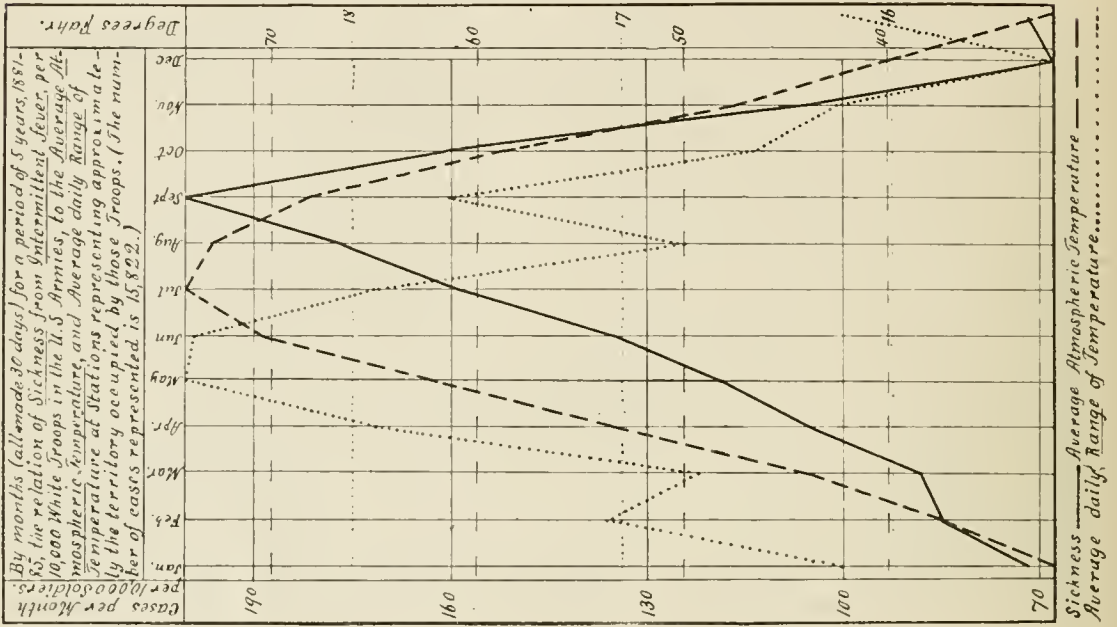
No. 8.—Atmospheric Temperature and Range of Temperature and Malarial Disease (Deaths) in the State of New York.

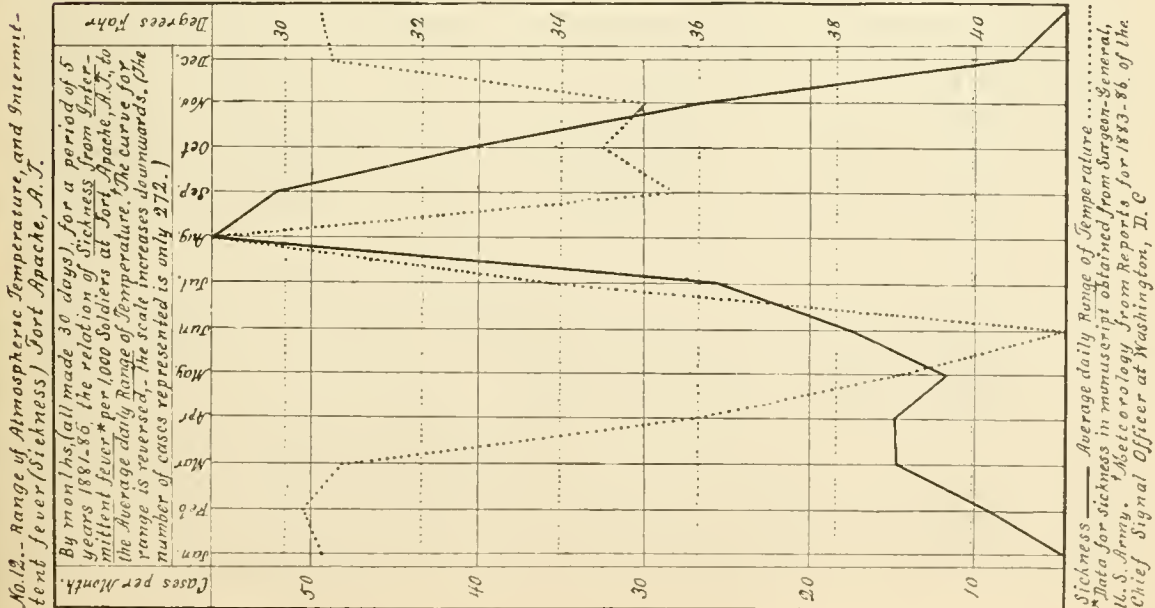
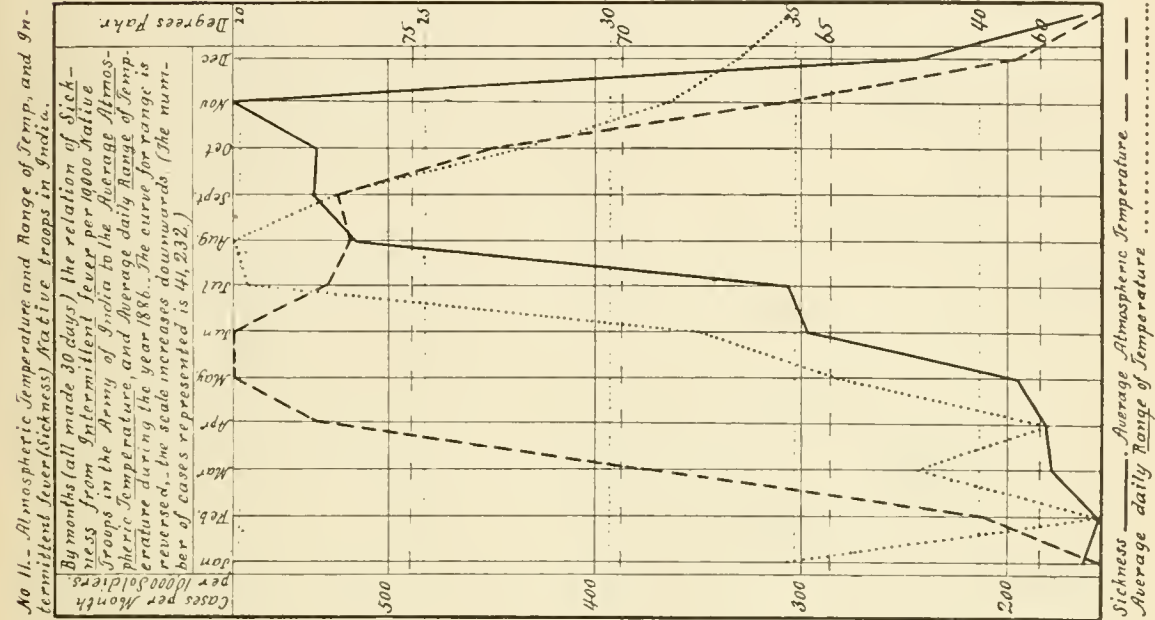


No. 10.—Atmospheric Temperature and Range of Temp. and Intermittent Fever (Sickness), European troops in India.



No. 9.—Atmospheric Temperature and Range of Temp. and Intermittent Fever (Sickness) U.S. Armies, 1881-5.





TABLES FROM WHICH THE ACCOMPANYING DIAGRAMS WERE DRAWN.¹

No. 1.—Range of Atmospheric Temperature, and Intermittent Fever (sickness) in the United States Armies.

	Jan.	Feb.	Mar.	April	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Intermittent Fever.	19.4	19.6	20.4	23.6	24.5	30.6	25.6	32.0	38.5	36.8	28.1	19.3
Average Range of Temperature.	9.87	11.55	12.36	14.88	16.10	15.21	15.57	17.01	16.76	16.41	13.12	8.87

No. 2.—Range of Atmospheric Temperature, and Intermittent Fever (Sickness) in Michigan.

Intermittent Fever.	58.4	60.8	62.5	70.4	75.8	77.8	79.5	79.0	79.0	76.1	67.0	58.8
Average Range of Temperature (Mich.).	16.34	18.23	18.02	19.41	20.83	20.62	20.50	19.84	19.74	17.69	14.69	13.56
Average Range of Temperature (Lansing)	17.25	18.29	18.33	20.67	21.72	20.46	21.61	22.05	22.35	19.81	15.73	13.99

No. 3.—Maximum Atmospheric Temperature, and Intermittent Fever (sickness) in Michigan.

Intermittent Fever.	58.4	60.8	62.5	70.4	75.8	77.8	79.5	79.0	79.0	76.1	67.0	58.8
Max. Temperature at Lansing.	28.2	31.1	39.1	55.7	69.2	77.0	82.3	79.9	73.5	61.3	43.3	31.9

No. 4.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), Memphis, Tenn.

Intermittent Fever.	17	18	15	28	27	39	85	83	76	66	42	25
Range of Temperature	15.2	16.4	17.1	17.5	18.5	18.0	17.2	17.0	17.5	15.4	16.9	16.4
Mean Temperature.	40.4	44.8	51.8	61.3	70.6	78.2	81.2	79.1	71.5	61.8	49.6	42.4

No. 5.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), Cincinnati, Ohio.

Intermittent Fever.	15	13	26	19	14	20	24	37	29	26	10	5
Average Range of Temperature.	14.10	16.40	15.20	16.10	16.90	15.90	16.60	16.40	15.90	14.90	14.40	14.40
Mean Temperature.	30.4	37.1	41.9	53.4	64.2	73.0	77.1	74.9	70.1	59.5	46.0	37.7

No. 6.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), San Francisco, Cal.

Intermittent Fever.	26	32	31	35	26	46	42	70	105	68	51	33
Average Range of Temperature.	8.44	9.92	10.86	10.52	11.84	10.68	11.28	10.48	12.30	10.54	9.22	8.70
Mean Temperature.	49.9	51.1	54.7	54.8	57.0	57.8	59.3	58.1	59.6	57.5	54.8	51.7

No. 7.—Atmospheric Temperature and Range of Temperature, and Malarial Fevers (deaths), in New York City.

Deaths from Malarial Diseases.	402	440	507	496	512	447	582	600	849	764	539	483
Average Range of Temperature.	13.28	14.20	14.54	16.36	16.48	16.92	15.90	15.70	16.08	15.36	13.90	13.40
Mean Temperature.	39.2	31.4	36.8	47.0	59.1	68.7	73.7	72.3	65.3	55.6	42.6	33.0

No. 8.—Atmospheric Temperature and Range of Temperature, and Malarial Diseases (deaths), in the State of New York.

Deaths from Malarial Diseases.	176	193	196	225	208	191	204	258	325	297	247	216
Average Range of Temperature.	13.28	14.20	14.54	16.36	16.48	16.92	15.90	15.70	16.08	15.36	13.90	13.40
Mean Temperature.	29.8	31.1	36.4	47.1	58.9	68.6	73.5	72.1	65.5	55.5	42.8	33.3

No. 9.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), U. S. Armies, 1881-5.

Intermittent Fever.	71.73	84.69	88.15	104.92	118.49	135.17	158.75	176.94	200.68	161.12	105.20	67.92
Average Range of Temperature.	16.18	17.05	16.72	17.92	18.61	18.59	17.92	16.77	17.64	16.51	16.20	15.40
Mean Temperature.	32.0	37.5	43.8	53.4	62.2	70.4	74.2	72.8	68.2	58.7	47.4	39.9

No. 10.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), European troops in India.

Intermittent Fever.	168	132	130	178	200	250	238	414	451	424	468	204
Average Range of Temperature.	34.8	43.2	38.4	41.9	36.2	32.4	20.2	19.8	22.6	27.7	31.6	33.5
Mean Temperature.	58.6	61.4	69.3	77.3	79.2	79.2	77.7	76.5	76.8	73.1	66.3	60.6

No. 11.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), Native troops in India.

Intermittent Fever.	163	156	178	181	195	297	307	517	537	535	573	244
Average Range of Temperature.	34.8	43.2	38.4	41.9	36.2	32.4	20.2	19.8	22.6	27.7	31.6	33.5
Mean Temperature.	58.6	61.4	69.3	77.3	79.2	79.2	77.0	76.5	76.8	73.1	66.3	60.6

No. 12.—Range of Atmospheric Temperature, and Intermittent Fever (sickness), Fort Apache, A. T.

Intermittent Fever.	4.62	9.02	14.77	14.89	11.62	17.06	25.59	56.10	52.12	40.73	26.69	7.70
Average Range of Temperature.	39.56	39.30	39.86	35.94	38.94	41.34	33.84	28.96	35.64	34.64	35.22	39.70

¹ More complete headings, and details of the extent and sources of the facts included in these Tables, are given in the diagrams, Nos. 1 to 12, which graphically exhibit the facts which are numerically stated in these Tables.

those made sick are kept sick by still more unfavorable temperature ranges; to such an extent is this true that the greatest effect of the unfavorable range seems to extend to the month following the change in atmospheric temperature range. But, on the other hand, when the change in the range of atmospheric temperature is in the opposite direction—toward lessened range—a condition favorable to freedom from intermittent fever, then, at least after the first such month, the fever falls nearly with the decrease in the range; probably because under the atmospheric condition which does not tend to

cause the chills and fever, those who contracted the disease under the less favorable conditions tend rapidly to recover under the more favorable condition, so there is little or no accumulation of cases.

The evidence in the table and diagram relating to the intermittent fever in the U. S. Armies during the late war I consider very powerful, representing as they do so many cases among persons more than usually exposed to out-door conditions. Then, too, the statistics are of cases of sickness which must be considered to have a close relation

to causative conditions, perhaps closer than would be the deaths.

RANGE OF TEMPERATURE SOMETIMES HAS
DIRECT, SOMETIMES INDIRECT RELATION
TO INTERMITTENT FEVER.

Although there is demonstrated to be a direct close relation between the daily range of atmospheric temperature and intermittent fever in Michigan, and in that part of this country in which the U. S. Armies were during the years 1862, 3 and 4, a study of the subject in other parts of this country and in other countries where the average daily range of atmospheric temperature is either greater or less than it is in Michigan, seems to prove that in such parts of the world the relationship is reversed.

The strongest evidence on this part of the subject that I have found is that shown in the tables and diagrams relating to range of temperature and sickness from intermittent fever in the European and native troops in the armies in India, (Diagrams Nos. 10 and 11) representing, respectively, 20,268 and 41,232 cases of intermittent fever which occurred during a single year, 1886. In the diagram (No. 10) relating to the European troops, the curve representing the range of temperature is drawn as if the relation were direct, but it is evident that it is not direct, yet that it sustained a well-marked relationship, inversely. [The diagram has been re-drawn, reversing the curve for range of temperature.]

That it is not the average *temperature* alone that controls the fever is shown by the fact that in many of the diagrams the curve for the fever has variations for which there are no corresponding variations in the curve for temperature; but there are variations somewhat similar, although sometimes reversed, in the curve representing the *range* of temperature.

In the diagram (No. 11) relating to the native troops, the curve for *range* of temperature is drawn so that the scale increases downwards, and the diagram shows somewhat close inverse relationship between the range of temperature and the intermittent fever. In this diagram, also, there are variations in the curve representing fever which are not accounted for by the curve for *temperature*, and are better accounted for by reference to the curve for *range* of temperature. That in both European and native troops the fever continued to prevail until November, notwithstanding the changes in both temperature and range of temperature had occurred three to five months earlier, may possibly be accounted for by the accumulation of cases, in connection with the fact that the temperature had commenced its downward movement so that there was increasing exposure to temperatures comparatively low.

HOW DO THE EVIDENCES HARMONIZE ?

Taking the evidence as it stands it is strong to

the effect that in Michigan and the U. S. Armies the intermittent fever is quantitatively related to the daily range of atmospheric temperature, the *greater* the range the more intermittent fever; and that in India the fever is quantitatively related to the daily range of temperature, the *less* the range the more intermittent fever. I believe there is evidence of a similar reversal of relationship in some parts of this country, where the average daily range of temperature is very great or very little; although the statistics for such places do not cover a very great number of cases of sickness.

In another part of this paper there is an attempt to learn the conditions which tend most strongly toward the production of such a clonic spasm of the contractile fibres in the integument that loss of body heat is prevented, and the spasm or contraction does not yield until after a higher than normal internal body temperature has resulted. In that part of this paper, the conclusion is reached that the impress which most certainly tends to produce this condition of the body is the very insidious yet considerable cooling of the surface of the body generally; that sudden great changes in temperature (such as occurs in winter when one goes from a warm room directly into an atmosphere at the temperature of zero), are generally reacted against at once, and are not only recognized by the senses, but are unconsciously guarded against, and especially attract attention if confined to a particular small portion of the body. One method of resuscitating persons lacking in nervous control is to submit them to rapid changes in temperature by the alternate application of hot and cold water, or by other similar means to bring about immediate reaction.⁷

In physics, I believe the law is that "action and reaction are equal and opposite;" but whether or not the motion resulting from an action shall continue in the same direction, or be reversed in direction, depends upon the amount of resistance to its continuance, and upon the suddenness of the impact. An insidious change in atmospheric temperature which cools and constricts the surface of the body does not, so often as does a sudden change, meet with that resistance or proper response by the nervous system which is requisite in order that the normal regulation of the body temperature shall be brought about immediately.

If the proper reaction to cold is immediate it is useful; but when the reaction comes only after the conditions have so far changed that, instead of there being cold to react against, heat is being applied, then the result is a body temperature abnormally high, in which case, so long as the sur-

⁷ In the experience of sudden changes, the system has an impress analogous to that given the billiard ball, struck by the cue, when a "draw" ball is played; while in the experience of the insidious change the system has an impress analogous to that given the ball when a "follow" ball is played, in which case the impress continues after the ball has struck another, in spite of the opposing force which, under the condition first named, served to reverse the direction of the motion.

face of the body is cool and purple, we may have those sensations and appearances which are called chill; but as soon as the reaction is established, there is that higher than normal external as well as internal body temperature which has long been known as fever.

If we have reached the correct explanation of the mechanism of intermittent fever, we have explained why it is that in those parts of the world where the daily changes of atmospheric temperature are usually *very great*, the body is acclimated to and is best able to react against those changes which are most pronounced, and least likely to react against those changes which are most insidious. In India, then, and at Fort Apache, Arizona Ter., where the average daily range of atmospheric temperature is excessive, the intermittent fever should be inversely proportional to the average daily range of atmospheric temperature. These statistics seem to prove that this is so.

On the other hand, in those parts of the world where a majority of the daily changes in temperature are comparatively insidious, but where the inhabitants are so "toned up" that intermittent fever is not so often experienced, the greater the extent of the daily change in atmospheric temperature the greater the chance of causing intermittent fever, through unusual demands upon the heat-regulating nerves. In Michigan and those other temperate parts of the United States where those conditions prevail, the intermittent fever should be directly and quantitatively proportional to the average daily range of the atmospheric temperature. These statistics seem to prove that this is so.

In a few of the tables and diagrams which I have studied, there seems to be evidence that where the average daily range of atmospheric temperature is excessively small, the effect on the fever is uncertain.

In a few of the tables and diagrams there seems to be shown a direct relationship of range of atmospheric temperature to intermittent fever in all the months in which the average range is below about 16°, while in months when the range is above that, the relationship seems to be reversed; but even in such cases there is apparently good evidence that range of atmospheric temperature has influence.

In nearly all the instances studied, it is apparent that intermittent fever is more closely related to daily *range* of temperature than to the *average* temperature. It follows, therefore, that if the bacteria in the atmosphere alleged to cause the fever increase, as stated by Dr. B. Schiavuzzi, in proportion to the temperature of the *atmosphere*, then the experience of range of atmospheric temperature is a stronger controlling factor than is the bacillus malarie in the causation of intermittent fever.

If, however, the bacillus malarie is capable of

causing the fever, and it is in the atmosphere in proportion to the temperature of the *earth* (as also is alleged by Dr. Schiavuzzi), then we must await further evidence, because we have not yet sufficient statistics of the proportional prevalence of the bacillus in each month of the year at a sufficient number of parts of the world, nor sufficient collected and tabulated data of the temperature of the earth in different parts of the world, to answer the question.

SUMMARY.

So far as evidence is yet presented, it seems to be proved, then, that:

1. Intermittent fever is proportional, directly or inversely, to the average daily *range* of atmospheric temperature.

2. The *controlling* cause of intermittent fever is exposure to insidious changes, or changes to which one is unaccustomed, in the atmospheric temperature.

3. In the mechanism of the causation of intermittent fever, the chief factor is the delay in the reaction from exposure to cool air; this delay, extending to a time when greater heat-loss should occur, results in the abnormal accumulation of heat in the interior of the body, and in disturbed nervous action—the chill; and the final reaction is excessive, because of the accumulation of heat and, sometimes, because it occurs at the warmest part of the day.

4. The fever is the excessive reaction from the insidious influence of the exposure to cool air; and it is periodical because of the periodicity of nervous action, and because the *exposure* and the consequent chill are periodical, owing to the nightly absence of the warmth from the sun.

5. Residence in valleys or on low lands through which or upon which cold air flows at night and thus causes insidious changes in the atmospheric temperature, favors intermittent fever.

6. In our climate, those measures, such as drainage, which enable the soil to retain warmth during the night, and thus reduce the daily range of temperature immediately over such soil, tend to decrease intermittent fever among residents thereon.

7. In the cure and prophylaxis of intermittent fever, those remedies are useful which lessen torpidity and tend to increase the power of the body to react promptly to insidious changes in atmospheric temperature.

8. The slowness of the pulse, and other indications of torpidity, associated with retention of bile or with certain disturbances of the functions of the liver, are well known; but, so far as known to the writer, these conditions have not heretofore been considered as causative of the fever in the manner herein suggested.

DISCUSSION ON DR. BAKER'S PAPER.

DR. H. A. JOHNSON, of Chicago: While it is true that the existence of parasites in the blood of

malarial patients is demonstrable, is it a justifiable inference that they cause the disease? The existence of cottonwood trees along our prairie streams do not cause the presence of the water. One of the strongest objections to the so-called hematozoon of malaria being the cause of the disease is that they cannot be cultivated. They exist in the blood plasma, principally in the corpuscles. Can it be demonstrated, 1st, that it is a heterologous form; 2d, that it is not found in any other disease than malaria. These organisms are polymorphous, amœboid. Now one of the results of the malarial form of fever is the multiplication of the white blood corpuscles. Are not these hematozoa a genesis of white blood corpuscles?

DR. W. L. SCHENCK, of Kansas: The widespread presence of periodical fevers, and especially of the so-called malarial diseases, makes the study of the various forms a matter of great importance. In old times malaria was supposed to be the potent cause of the disease. What was malaria? It escaped the microscopist and the chemist. But now it is thought we have found the cause in a bacillus. Dr. Baker's paper showed that there are other causes to be considered. I would refer to papers of my own, published by the State Medical Society, which while not elaborated as Dr. Baker's, go to support this atmospheric theory. We do not think that the frogs and mosquitoes which occur in malarial localities cause the fever, therefore why believe bacteria or hematozoa, which alike have their habitat in swampy regions, are the cause of remittent fevers. Where heat and cold cause engorgement of the organs we find the disease occurs. If all exposed wore proper clothing, protecting them against the chill of the night, the disease might be less prevalent. Heat associated with moisture enervates, and alternating cold produces central action and congestion of organs, thus causing malarial fever.

I had an example in my family. My children, during a warm summer, slept in a door-way, a draught blowing over them. In five days they had malarial fever, yet no other member of the family nor no one in the neighborhood was so affected.

I believe the efficacy of quinia in this disease is its influence in producing disgorgement of the central organs, and stimulating their tonicity prevents reëngorgement.

DR. SHARP, of Mo.: I think the physical and chemical forces have been canvassed as far back as the time of Daniel Drake. He considered it was caused by an animalcule, not from microscopical study, but from the study of the disease. Nothing but a living organism will elaborate chemical compounds. Our bodies are only destroyed by living organisms. I am not yet prepared to accept the doctrine of living organisms as the cause of disease. Living in a malarial re-

gion, it soon becomes apparent to one that exposure in the early morning or evening causes the fever. From this experience alone strong support may be given to the theory advanced by Dr. Baker.

DR. LEE, of Pa.: I think Dr. Baker's paper the strongest and most ingenious argument in favor of a theory which has always seemed to me weak and inconclusive, that I have ever heard. The whole aspect of a malarial chill is that of an organism striving under a living poison. First, the powerful contraction of the blood-vessels under the influence of the vaso-motor system, causing the chill, indicates the presence of the poison and the impression it is making on the nervous system. Second, the febrile rise indicates the reaction from the poison. Third, there is the elimination from the emunctories of the noxious or effete material. The theory of heat and cold is quite inadequate to account for the periodicity of malarial fever. Cholera is similar in its phenomena, but the system does not always react as quickly from the stage of depression, hence the fatal issue. In our Western States we have a condition analogous to cholera in the congestive chill.

If heat and cold are the causes of ague we should have quotidian chill. Yet we know the latter are not the most frequent form; there is nearly always an interval making the chill tertian or quartan. It does not yet seem clearly proved how heat and cold cause malaria.

If we suppose the presence in the blood of an organism which has a certain life history and arrives at maturity in a certain number of hours we may have a rational explanation of the cause and effect of malaria.

Changes of heat and cold, we know, are as frequent in winter as in summer, therefore—if this theory were true—we ought to have the disease prevalent in winter as well as in summer.

MULLEIN IN THE TREATMENT OF MALARIAL TROUBLES.

Read in the Section on Practical Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY GEORGE BYRD HARRISON, M.D.,
OF WASHINGTON, D. C.

This brief paper is intended to draw attention to the remarkable results obtained, in certain sections of the South, during the war between the States, in the treatment of malarial fevers, by means of a very common and homely plant, mullein; (*verbascum thapsus* of Linnaeus). Perhaps it is wrong to speak of it as a "homely" plant, because it seems that all of its family seen in this country, (some three varieties), have been imported from Europe. "Familiar," would give

a better description. Although not an adult, during the earlier years of the revolution, I was old enough to note the signal effects of this herb as used in the treatment of malarial troubles. Quinine amongst us in those days was a luxury which few could command. My temporary home was upon the Upper James River, in Virginia, in a neighborhood in which chill and fever was anything but a rarity. Mullein was the resource under these circumstances, and proved to be by no means "a broken reed." I will try and give evidence of this, by direct testimony other than my own, later in my paper; regretting that, (owing to the state of things, then existing), it is not medical testimony, strictly speaking. I have selected this subject because our dispensaries, while placing *verbascum* quite conspicuously in their secondary list, and according to it a catalogue of virtues, are singularly silent as to its antimalarial properties. Wood, Bartholow, and Lauder Brunton ignore the vegetable, altogether, in their treatises upon *Materia Medica*.

Francis Peyre Porcher, in his well-known work, "Resources of the Southern Fields and Forests," says (Edition, 1869), "Of the order *scrofulariaceæ* (*fig-wort-tribe*), generally acrid and bitterish, sometimes dangerous in their properties; is mullein, (*verbascum thapsus-walt*) diffused; grows in pastures upper and lower districts, flowers in July" (a number of references given here); "The leaves of the flowers contain a narcotic principle. A decoction of the flowers and leaves (as tea), is beneficial in dysentery and tenesmus; it calms pain in the fundament, caused by hæmorrhoids; and it is used in the convulsions of infants; in ardor urinæ, and wherever the indication is to moderate spasm or irritation. A large quantity of the flowers will even induce sleep, so active is the narcotic principle it contains." (References given). This distinguished author then, after enumerating a number of diseases in which the plant is useful, and ascribing its value to "anodyne, emollient and gently astringent qualities," alludes to its employment in taking fish (the seeds being fed to them). I will not weary you by referring to a number of other complaints, in which he states that mullein has been found useful, but pass on to the following passage: "Equal parts of mullein leaves and the bark of the root of sassafras, boiled in water and concentrated, then mixed with powdered sassafras bark to form pills, are reputed valuable in the treatment of agues by herbalists." (See *Indian Guide to Health*). Surgeon Hinckley has reported several cases, in which the paroxysms of intermittent fever were completely prevented by the administration of the warm infusion of the fresh root; (4 ounces of the fresh root to one pint of water, reduced one-half by boiling; of which 2 ounces were given every hour, commencing four hours previous to the ex-

pected chill). (*Confederate S. Med. Journal*, January, 1864)."

My own recollection, of the efficacy of this herb, so strongly corroborates the observations of Surgeon Hinckley that I am entirely unwilling to resign it to the "herbalists." Within a few days past I have written to a lady (the wife of a Confederate officer of rank), whose practice, with mullein, was notably successful in my neighborhood, to ask her experience; and that she would give me her recipe. Her reply was prompt, and I give it to you at length:

R.—"Beat mullein leaves in an iron mortar; strain; and to the juice add an equal quantity of French brandy; in a wine-glass of this mixture put fifteen drops of spirits of camphor, and give just as the chill is coming on. The patient must be warmly covered and in bed before taking, and continue so for several hours after. Now for my experience: When I was told of it my husband had been having chills for seven years. I mean he had never been free from them more than a week or two at a time during that period. He would not consent to try this remedy, until one day, after taking 40 grains of quinine, he had a chill, which was so severe that we both feared congestion, and he said he would try anything. So after the chill had reached its height, I had the leaves gathered and beaten and gave him a dose. As soon as he swallowed it the moisture began to break out on his brow; and in five or ten minutes he was in a most profuse perspiration. He had not the least fever, and did not have another chill for fifteen years. I tried it after that, in, I suppose, fifty cases, *with perfect success*. Our physician in the neighborhood, (Dr. R. K. T.) used to laugh at me about it very much; but the last time I saw him he told me that during the war, when he could not get quinine, he had to resort to it, and found it most efficacious, not only in cases of chills, but in bilious and typhoid fevers. Of course he could not get brandy at that time, but used whisky instead, and usually, the commonest kind. I am glad to hear you are going to sing the praises of this wonderful plant."

I know very well that the carping reader or listener, as the case may be, will object to my adducing lay evidence of this sort, in a paper relating to a scientific subject. I know, too, that he will consider that the case notes detailed savor of inaccuracy and enthusiasm. Such a one, however, is ignorant of the peculiar state of things existing in the South, during the days of Slavery. In regard to the first proposition, he will have to be informed of the especial relations occupied by the cultivated wife of the large Southern planter to her husband's slaves ("servants" as we were taught to call them). This information, happily, I can give from the pen of a distinguished foreigner, the Marquis de Chastelux, a general officer under the Comte de

Rochambeau, in the Revolutionary War. This accomplished gentleman, after the surrender at Yorktown, made a tour of the Union and Canada; and the edition of his delightful work (from which I quote) was published in 1827, by White, Gallagher & White, No. 7 Wall Street, New York. On page 282, after describing the beauties of Westover, the old homestead of the Byrd family, on the James River, (well-known in our day as a part of McClellan's entrenched Camp), and after numerous tributes to the elegance and hospitality of his hostess, Mrs. Byrd, he says: "This lady takes great care of her negroes; makes them as happy as their situation will admit, and serves them herself as a doctor in time of sickness. She has even herself made some interesting discoveries in the disorders incident to them, and discovered a very salutary method of treating a sort of putrid fever which carries them off commonly in a few days, and against which the physicians of the country have exerted themselves without success." In reference to the case detailed, in the letter quoted, in which chronic malaria was gotten rid of by one treatment, astonishing as the result was, I can testify to a similar instance in my father's household, in which quinine had failed, and a successful result was obtained by the use of this lady's mullein-juice preparation.

Undoubtedly our Pharmacopœia is already over freighted with drugs and remedies, many of them inert or unnecessary. But in calling attention to this one, I am not introducing a new title. The plant is already "on the list." No one has greater faith than I in the virtues of cinchona and the salts of its alkaloids, especially quinine and cinchonidia, but, unfortunately, we are now and then compelled to refrain from their use by reason of personal idiosyncrasy. One man is known to me, in whom such alarming hæmaturia occurs after one dose of quinine that he cannot be induced to take it. I have known this symptom to follow a dose clandestinely given by his physician, who doubted the alleged effect. We are all accustomed to see troublesome rashes resulting from quinine and other agents of its series, as well as nervous phenomena, in some patients, which positively inhibit their employment. In the case of a very prominent gentleman, who recently died in this city and who suffered from congestive malaria, his physician gave quinine, perfectly assured from previous knowledge of the idiosyncrasy of his patient, that the nails would be shed. He told me that the result was as anticipated, nails dropping out, and skin desquamating. Arsenic stands us in good stead as a substitute in chronic cases; and Warburg's tincture is popular, with some practitioners, in acute cases. Gelsemium and other resorts we undoubtedly have; but I am sure that an antiperiodic possessing the value which I am confident pertains to this drug, would be gladly welcomed by one and

all of us—and I should feel much gratified if our enterprising manufacturing pharmacists should be led to develop its active principles, so as to offer us a convenient form of administration.

1345 F St., N. W.

A CASE OF TRANSVERSE LACERATION OF THE CERVIX UTERI.

*Read before the Medical Society of the District of Columbia,
May 16, 1888.*

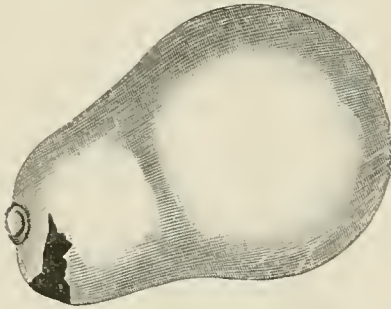
BY THOMAS C. SMITH, M.D.,
OF WASHINGTON, D. C.

On May 2, 1888, I was called to see Mrs. R., colored, 23 years of age, who was seven and a half months advanced in her first pregnancy. Early in the morning she was startled by a sudden gush of fluid from the vagina, and up to the time of my visit there had been an uninterrupted discharge unattended by pain. On making an examination, the os was found undilated, but a watery fluid was passing in small quantities. No signs of labor were manifest at the time, and the patient was directed to remain in bed.

Two days later, May 4, I received another message, and saw the woman about the middle of the day. The nurse informed me that pains came on shortly after my previous visit, and that they had steadily increased in severity, but finding that no progress was being made, she had sent for me. The woman was now having almost continuous expulsive pains, and on making an examination my finger came against the os. This was undilated, and at first I thought my finger was pressing against the anus of the child; in other words, that there was a breech presentation to deal with. But on removing my finger for a moment, and again passing it up to the uterus, I was surprised to find the vertex presenting and the supposed os dilated to a diameter of some two inches. As this apparent change had taken place in less than a minute, I proceeded to make a careful examination, and the following situation was disclosed: The natural os was discovered to be undilated so that I could scarcely pass my finger through it, while the head of the child was found to be engaged in an abnormal opening, which investigation proved to be a tear in the cervix about an inch and a half from the margin of the normal os. This laceration extended laterally about one-third of the circumference of the cervix at the point indicated, and was situated to the left and posteriorly. When the uterus contracted, the head engaged in this opening, while the normal os was absolutely unaffected by the pains.

So interesting a complication in labor induced me to invite a professional brother to make an examination, and finding Dr. J. T. Winter in the neighborhood, he was asked to see the case. After explaining the state of affairs to Dr. W., he examined the patient and satisfied himself that my

explanation was correct. As it was impossible to effect dilatation of the normal os in the presence of the laceration, and as the latter was extending, with the probability that the whole circumference of the cervix would be involved if the direction of the tear did not, indeed, change and involve the body of the uterus, I passed a probe-pointed bistoury through the laceration and out of the os, and divided the tissues so as to convert the lesion into a longitudinal laceration of the cervix. The patient experienced no pain from this procedure, which was unattended by hæmorrhage. Being apprehensive that instrumental interference might be demanded, I went to my office for my forceps, and on returning found that the child had just been born. This was separated, and the placenta delivered without trouble. The only after-treatment consisted in washing out the vagina twice daily with water which had been boiled. The woman has not had an unpleasant symptom since her delivery. A few days ago I made an examination and was hardly able to find the laceration, so well had the work of repair progressed.



Referring to lacerations of the cervix during labor, Lusk makes the following observations:

"Most commonly these lacerations follow a longitudinal direction. In rare cases, where there is extreme rigidity of the os externum, or where, after the escape of the amniotic fluid, the head distends the anterior lip without pressing upon the os, a transverse rent may occur through which the child may pass. Sometimes a longitudinal tear may be combined with one running transversely, the lip then hanging by a pedicle to the uterus, or the entire lip may be torn off. Isolated cases of so-called annular lacerations have been reported, where the transverse rent has extended through the whole vaginal portion, so that the lower segment has been detached in the form of a ring."

The foregoing quotation covers the ground admirably. In my case the os was not rigid, but failed to dilate because the uterine forces were misdirected, while the head distended the posterior lip "without pressing upon the os."

Reference to the figure will further elucidate the nature of the lesion present in the case above reported.

MEDICAL PROGRESS.

SALOL IN LUMBAR ABDOMINAL NEURALGIA.

—In gouty subjects lumbar abdominal neuralgia has a considerable importance in uterine affections, and frequently persists even after the latter disease has been cured: this is especially the case in gouty subjects, and M. J. CHERON (*Rev. Méd.-Chir. des Maladies des Femmes*, July 25, 1888) recommends in such cases the employment of salol, taken internally. This remedy, according to the author, is well supported by the stomach, and exerts a favorable action on the rheumatic and neuralgic pains. He advises that the salol should be powdered, and 10 grains divided into twenty capsules, of which two to four should be taken daily before meals. In addition to this, an ointment of salol and vaseline in equal parts may be rubbed into the lumbar sacral regions.—*Thérapeutique Gazette*, Oct. 15, 1888.

MENTHOL IN PRURITUS LABII.—ALEXANDER DUKE, having seen some time since in the *Journal* an interesting paragraph by Dr. Routh, Jr., on the value of peppermint water in cases of pruritus, I gave it a trial; but finding it only gave slight relief, I applied the crystalized menthol as sold by Shirley and others, for relieving neuralgic pain. The application produces some burning pain at first, but is followed by a most comfortable sense of coolness and relief, which relief I find lasts for days in some cases, and the congested color of the vulva almost altogether disappears. The menthol is applied by rubbing the surface over three or four times with the solid menthol, and I can certainly testify as to its value.—*Brit. Medical Journal*, Sept. 1, 1888.

HELLEBOREUS VIRIDIS IN CARDIAC DISEASES.

—DR. CHRISTOVITCH has made a series of experiments on dogs and frogs, and has used the extract of this plant in eleven cases of heart disease. He concludes that: 1. The action of the heart is increased by it, and the fulness of the pulse augmented. 2. Morbid activity of the heart is diminished in cases of excessive cardiac action. 3. Congestions of the lungs, liver and kidneys are relieved by it. 4. The secretion of urine is increased. Christovitch uses a soluble extract.—*L'Union Méd.*, Aug. 14, 1888.

TREATMENT OF INFANTILE CONVULSIONS.—A. VEILLARD recommends the following mixture for the treatment of infantile convulsions: Tincture of musk, tincture of castorium, sulphuric ether, each 32 minims; paregoric, 8 minims. Six drops are given each hour in a teaspoonful of sugared water or a teaspoonful of milk. The intervals may be lengthened as the symptoms become moderated.—*Journal de Médecine de Paris*, August 12, 1888.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.
PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their *Annual Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, NOVEMBER 10, 1888.

AN IMPORTANT AMENDMENT TO THE CONSTITUTION OF THE ASSOCIATION.

Every thoughtful member of the American Medical Association must admit that the selection of Officers and Standing Committees, and especially of the place and time of the Annual Meetings, is a duty of great importance; and should be performed in such a manner as to secure the exercise of intelligence and deliberation. And all know that hitherto this important work has been done by the Committee on Nominations, composed of one member from each State and Territory, and from the Medical Corps of the Army, Navy, and Marine Hospital Service, all selected by the members in attendance from each State, Territory, etc., during the first twenty-four hours of the Annual Meeting, and announced by the permanent Secretary on the morning of the second day. The Committee thus selected and announced almost immediately enters upon the discharge of its important duties, and is expected to make judicious nominations for the Officers, Standing Committees, Judicial Council, Trustees for Publication of THE JOURNAL, and to recommend the place and time for holding the next Annual Meeting in a few hours, and then be discharged. No member of the Committee could know that he would be called upon to act in that capacity long enough before going into the Committee room, to enable him to examine the past records of the Association, or even its Constitution and By-laws, much less to make proper inquiries concerning the place and time that

would be most advantageous for the Association and the profession to hold its next Annual Meeting. The constant liability to make mistakes and injudicious recommendations by such a Committee has been demonstrated many times during the progress of the Association, and at no time more strikingly than at the recent annual meeting in Cincinnati. The *personnel* of the Nominating Committee selected at that meeting was equal in intelligence and business tact to that of any of the committees appointed at previous meetings, and yet it recommended for local Assistant Secretary one who, at the time, was not a member of the Association, and a *time* for the holding the next annual meeting one month before there would be any adequate hotel accommodations open for the reception of members in the city selected for the *place* of meeting, and the Association adopted the recommendations. Had the Nominating Committee been a continuous business committee, one-half of whose members were selected annually, and their work so arranged that the members who were to make the nominations and recommendations at any given annual meeting would have all the preceding year in which to make necessary inquiries and make themselves familiar with the true interests of the Association, such blunders would be wellnigh impossible. It was solely for the purpose of avoiding the evils of having the most important business interests of the Association conducted in such haste, that an able committee, after much deliberation, recommended at the meeting in 1887 the following amendment to Section V of the Constitution:

The General Committee or Council shall be composed of *two members* from each State and Territorial Medical Society entitled to representation by delegates in the Association, and from the Medical Departments of the U. S. Army, Navy, and Marine Hospital Service. They shall be chosen by the members registered and present at each annual meeting, from each State, Territory, and from the Medical Corps of the U. S. Army, Navy, and Marine Hospital Service, acting separately, on the third day of each annual meeting; each delegation reporting the names of the members chosen to the Permanent Secretary of the Association on the same day, that they may be announced by him at the opening of the morning session of the fourth day. At the first election each delegation shall choose *two members* of the General Committee, one of whom shall serve *one year* and the other *two years*, and at each annual election thereafter one member shall be

chosen to serve for two years, thus making the term of office of members of the General Committee *two* years. It shall be the duty of the General Committee, thus constituted, to organize by choosing annually a Chairman and Secretary, and such sub-committees as may be found necessary to facilitate the work that may be assigned to it; to meet annually at the place and on the day preceding each annual meeting of this Association, and as often during that week as may be necessary; to nominate, on the third day of each annual meeting, all the general officers of the Association (none of whom shall be members of its own body), the members of the Committee of Arrangements, the Committee on Necrology, seven members of the Judicial Council, and three members of the Board of Trustees for Publication for election by the Association; to recommend the place and time of holding the next annual meeting; and to consider and report upon all subjects that may be referred to it by vote of the Association. The presence of one-third of the whole number of members elected to the General Committee shall constitute a quorum for the transaction of business. If, at any annual meeting of the Association, it shall be found at the close of the general meeting of the first day that a quorum of the General Committee is not present, it shall be the duty of the President and Permanent Secretary to fill the vacancies in the Committee temporarily by selections from the lists of delegates registered as present from the States to which the vacancies belong.

Should this provision be adopted by the Association, the Permanent Secretary should be authorized to substitute the name "General Committee" for "*Nominating Committee*" wherever the latter occurs in other parts of the Constitution and By-laws.

When this amendment was submitted to the meeting in 1887 in connection with the full report of the Committee, it was approved by a nearly unanimous vote of the Association. But it could not become a part of the Constitution without lying on the table and receiving the sanction of the next annual meeting. When it was taken up at the next meeting several members opposed it on the erroneous assumption that its adoption would result in taking the business out of the Association and committing it to a Council, somewhat after the manner of the British Association. As there were not enough copies of the amendment present to put one into the hands of each member to examine for himself, its further consideration was postponed until the next annual meeting. If members will now examine it carefully, they will see that by it the proposed Business Committee is

appointed by the same process as the former Nominating Committee, and that it has no power to take any business out of the hands of the Association, but simply substitutes a continuous committee so arranged as to enable it to do the work assigned to it deliberately and intelligently, instead of hastily and often imperfectly.

PUERPERAL FEVER A PREVENTABLE DISEASE.

At the opening of the 1888-89 session of the St. Thomas's Hospital, London, DR. CHARLES J. CULLINGWORTH, the obstetric physician to the Hospital, delivered an address on "Puerperal Fever a Preventable Disease," a plea for the more general adoption of antiseptics in midwifery practice. The address deals to some extent with statistics, and though short, it contains facts of importance to those that claim that childbirth is a simple physiological process, and to the few that hold that antiseptic midwifery and meddlesome midwifery are synonymous terms.

The profession will remember the astonishment, not to say incredulity, caused some eighteen years ago by Dr. Matthews Duncan's conclusion from careful investigation that "not fewer than 1 in every 120 women, delivered at or near full term, die within the four weeks of childbed." The late Dr. Farr, who in 1856 had declared the mortality of childbed in England and Wales to be 1 in 189, at first denounced Dr. Duncan as an alarmist, but before he died he admitted that the mortality was 1 in 129. From the Registrar-General's returns of puerperal mortality in England and Wales, it is seen that in the three years 1867-69 there were 2,228,588 children born alive; the deaths from childbirth were 10,198 (from puerperal fever 3,343), being an average mortality per 1000 of 4.37. In the three years 1884-86 there were 2,704,886 children born alive; deaths from childbirth 12,673 (6,966 from puerperal fever), giving an average mortality per 1000 of 4.68. While it is most probable that the figures of the Registrar-General are below the truth, still we see that within the three years 1884-6 there was an average of 2,322 deaths from puerperal fever in England and Wales. Other, and we may say more reliable, statistics, go to show that puerperal fever is accountable says Dr. Cullingworth, for from 65 to 75 per cent. of all the deaths from childbirth.

It is almost one hundred years since Dr. Alex-

ander Gordon published his account of an outbreak of puerperal fever that occurred in Aberdeen in December 1789–March 1792, giving a table of 77 cases that came under his own care. He showed that the midwives, nurses, and physicians were directly responsible for the continuation and spread of the disease and said: "It is a disagreeable declaration for me to mention that I myself was the means of carrying the infection to a great number of women. . . . I arrived at that certainty in the matter that I could venture to foretell what women would be affected with the disease upon by hearing by what midwife they were to be delivered or by what nurse they were to be attended during their lying-in, and in almost every instance my prediction was verified." We have similar testimony from Mr. Robertson, of Manchester, in regard to an outbreak in the maternity department of St. Mary's Hospital in 1830, due to one infected midwife, and from Mr. Blackmore in regard to an outbreak in Plymouth in 1831. In 1847 the mystery was cleared up and the first seeds of antiseptic—or aseptic—midwifery were sown by the immortal Semmelweiss.

Nothing has done more to retard the acceptance of the principles of antiseptic midwifery, and thus the practice, than that "confession of ignorance, the creed of fatalism, the very pessimism of obstetric medicine," the doctrine of autogenesis. It is impossible to see how anyone can read the statistics from the Lying-in Hospital of Vienna, from the Dresden clinic, the Paris Maternité, the New York Maternity, the Boston Lying-in Hospital, and other institutions, without being convinced of the utter fallacy of the theory of spontaneous infection. No stronger arguments can be brought forward than the facts and figures already at hand. Let us look at some of these figures of pre-antiseptic and antiseptic periods. In the Vienna Lying-in Hospital from 1863 to 1880 the rate per 1000 from puerperal fever was 11; in 1881–1885 it was 4. In the Dresden clinic the mortality per 1000 from puerperal fever was 8.7 in 1884, 1.4 in 1885, 1.4 in 1886, and 0.7 in 1887; in 1872 the mortality was 50 per 1000. In the Vienna Hospital from 1881 to 1885 there were 15,070 deliveries, with 2543 obstetrical operations, including 9 Cæsarean sections. In the Dresden clinic out of 2,775 women delivered in 1886–87, 396, or 14 per cent., required operative interference; 27 of the patients had eclampsia,

23 had placenta prævia, and 224 had well-marked contraction of the pelvis. In 1886, 77.8 of the patients in the Dresden clinic made perfectly normal recoveries, and 95 per cent. in 1887. In 1883 the mortality per 1000 from sepsis in the New York Maternity was 60.6. The antiseptic midwifery was inaugurated in the institution, and in 1884 the rate fell to 5.9, to 1.8 in 1885, and was 2.1 in 1886. In the Boston Lying-in Hospital the mortality from sepsis was 55.5 in 1882, 45.8 in 1883, 16.1 in 1884, 6.4 in 1885, and 0 in 1886.

A little more than a year ago Koch said that septicæmia was beyond the grasp of the pathologist in Germany, as antiseptics had succeeded in almost exterminating the disease in that country! (Senn: *Four Months among the Surgeons of Europe*, p. 63.) In the lying-in department of the Bürger Hospital in Strassburg "the antiseptic precautions are so thoroughly carried out that puerperal sepsis has never been known to originate in the walls. A small building, isolated from the main building, serves for the reception and treatment of infected patients from the city and surrounding country, and here the student finds the only opportunity to study at the bed-side and the post-mortem room the infective diseases incident to child-bed."

There is still a notion abroad, says Dr. Cullingworth, (*British Medical Journal*, Oct. 6, 1888) that this question of puerperal fever is one that chiefly concerns the lying-in hospitals. But one would scarcely suppose that the 2,708 deaths from puerperal fever in England and Wales in 1886 were all hospital cases; as a matter of fact almost 66 per cent. of them occurred in counties where no hospital exists, and as to the remainder, the lying-in hospitals of England and Wales are so few that they cannot be accountable for more than a small number of these. In a country town not far from London, says Dr. Cullingworth, puerperal fever has singled out the patients of one local practitioner. For six months every patient he attended, except two, in whom labor was completed before his arrival, died of puerperal fever. "The only way to avoid this terrible mortality, and to avoid also the enormous amount of puerperal disease which, because it is not fatal, remains unrecorded, is for every practitioner in midwifery to recognize his personal responsibility in the matter."

BRAIN OVERWORK IN CHILDREN.

The Chicago *Tribune* says: Dr. Charcot, the great French physician, says that children under 16 cannot have their brains overworked. No forcing, he asserts, will get out of them more cerebral work than the brain will accomplish without fatigue. It is not till after the age of 16 or 18 that forcing becomes possible.

It is extremely doubtful if M. Charcot ever made such a statement as the above. Such an assertion is reckless, because one cannot draw a hard and fast line at 16 years of age. If all children of 16 were made on the same mould, all had the same muscular development, all the same amount of nervous force, and the same degree of brain-development, it might be allowable to make some definite statement of the kind quoted. But to quote M. Charcot as authority for the above is dangerous, since the outcome may be that children already overworked may be seriously injured by unthinking parents or teachers.

"PROTECTION OF THE MEDICAL PROFESSION."

The following significant communication appears in the *Lancet* of October 13:

"There can be no doubt that it is high time for the great body of general practitioners to take some steps to protect themselves against the present rush of men into the profession, which is out of all proportion to the numbers leaving it, and as a result of which medical men are reduced to practice all manner of shifts to gain sufficient to merely exist. Medical ethics are becoming a dead letter, and a once noble and honorable profession is becoming little better than a trade. It behoves every medical gentleman to exert himself to the utmost to save his profession from dishonor.

"I beg to offer the following suggestions for remedying the present condition of things: 1. That every member of the profession in Great Britain and Ireland be canvassed as to the advisability of forming an association for the protection of the profession. 2. That the number of candidates admitted into the profession by the various corporations be regulated according to the vacancies occurring in the profession, as is done in the army and navy. 3. That a fee be fixed below which a medical man may not charge, and if his client be unable to pay, let him rather give

his services for nothing. 4. That the remuneration of all appointments be regulated by a council of the profession, and that no man shall take an appointment in opposition to this council."

"Medical Ethics are becoming a dead letter." In spite of the assertions of some of our cis-Atlantic, no-ethics contemporaries, we have here evidence that there is a Code of Ethics in Great Britain.

The suggestions offered by the *Lancet's* correspondent are more in the line of trades-unionism than anything we have ever seen proposed. An association for the protection of the profession would undoubtedly be a good thing if conducted on correct principles. Suggestion No. 2 would seem to be but a Utopian dream—if Utopian. The third suggestion seems inadvisable under any circumstances, would be productive of results almost as bad as are now complained of, and would stamp as paupers many people that are not paupers. And after all, the profession in England is not so overcrowded as in the United States,

EDITORIAL NOTES.

SMALL-POX IN ONTARIO has assumed such a threatening aspect that the Board of Health urges people that have not been vaccinated to be vaccinated immediately.

THE FACULTY OF MEDICINE OF PARIS received this year 373 Doctors of Medicine, including 327 French and 51 foreigners. On October 9th there were 3,668 male and 114 female students.

MENTAL ALIENATION IN NEW ZEALAND.—Dr. E. W. Alexander states that of 1,613 insane in the asylums in New Zealand, 1,302 are of foreign birth. Among the 111 native insane 21 are of the aboriginal or Maori race, which now number about 50,000.

NAPLES, it is to be hoped, will be more healthy when the now complete plans for its sanitary rehabilitation are carried out. The rookeries in four of its sections are to be demolished, and good dwellings erected. Drainage will receive careful attention, and the city is to have a sound and permanent system of water-supply.

DEATH DURING HYPNOTISM.—A Louisville paper says that at Hopedon, Ill., recently, Dr. I. N. Bishop extracted a tooth for his wife and at-

tempted to relieve her pain by an exercise of his mesmeric powers over her. He made a few movements over her face, when she screamed and fell dead. She was not subject to heart disease.

THE LOS ANGELES PEST-HOUSE seems to be in bad odor with the citizens of the place, according to the *Los Angeles Times*. It is badly in need of repairs, the residents in the neighborhood wish it removed, and threaten to get out an injunction against any repairs on it. The residents in the neighborhood where the new pest-house is to be located have already sworn out an injunction against the building of it.

EXPERIMENTAL URÆMIA IN PREGNANCY has been produced in pregnant rabbits by Drs. CHARPENTIER and BUTTE, with the view of determining the influence of uræmia upon the fœtus. They found that the fœtus died before the mother, the fœtal blood and tissues always containing a larger percentage of urea than those of the mother. The probable explanation is that the fœtus is unable to get rid of any part of the urea by excretion, while the mother can do so.

SINGULAR CASE OF SELF-MUTILATION.—A Dublin medical student, who had been subject to delusions for some time, recently removed both his eyes, and has refused to give any explanation of the occurrence. The act was committed in a field, where were found a blood-stained walking cane and a piece of wire, which were probably used to remove the eyes. The unfortunate young man was found lying down, about a hundred yards from the stick and wire.

TREATMENT OF PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—DR. W. B. COLEY analyses, in the *Boston Medical and Surgical Journal*, 74 cases of penetrating shot-wound of the abdomen. Of these 29 recovered, giving a percentage of recoveries of 39.5. The cases are divided into three classes: Class I contains cases operated on within the first 12 hours; 39 cases—18 recovered; 43.6 per cent. recovered. Class II, cases operated on after 12 hours; 22 cases—5 recovered; 22.7 per cent. of recoveries. Class III, cases in which the time of operation could not be ascertained; 13 cases—7 recovered, 5 died, 1 doubtful; 57 per cent. of recoveries. The causes of death in the cases that did not recover were as follows: hæmorrhage 4 cases, peritonitis 9, shock 8, wounds not

found by operator 4, pneumonia 1, acute pericarditis 1. Dr. Coley's classification shows very clearly the advantage of an early operation, the percentage of recoveries in cases operated on during the first 12 hours being nearly double that of cases operated on after 12 hours.

LOSS OF MEMORY FROM AN ACCIDENT, while curious, is not so very rare. On October 30 Dr. Hillebrand, of Freeport, Ill., was exercising a colt. The horse became rather restless and unmanageable, and that is the last thing that the doctor remembers concerning the accident. He was discovered lying unconscious in the street, and immediately taken to his residence. Dr. Buckley was summoned without delay, and after examination discovered no bones broken. The left wrist was sprained and his face and head cut and badly bruised. It was some hours before he regained consciousness, but, as above stated, remembered nothing of the runaway, and even on the next day could not recall any particulars of the accident. The doctor is suffering considerable pain, and will be compelled to remain indoors for some time.

THE HAMMOCK AND THE SWING.—A writer in the *Chicago News* gives the result of an experiment, showing that the instinct of children has in it not only a love for recreation of a choice sort, but a sanitary common sense. A number of swings were suspended at a summer home for children, and near by were swung two dozen hammocks. The latter were almost always full, but the swings rarely were in use. The hammock is the most natural invention to give perfect rest and ease to the whole body, with a delicious sense of motion and activity. Every home should have several hammocks swung under trees, for the use of both adults and children. It will tend greatly to relieve the strain of everyday toil, and to sweeten the intercourse of its members.

THE MEDICAL STUDENT'S PARADE in Toronto on the night of October 31 ended in a serious affair. While the students were on their way home they stopped in front of the house of Dr. McCully, a specialist, who is dubbed a quack by the local profession, and commenced to groan and hoot. McCully appeared at an open window with a gun. This angered the students, and they commenced to throw bricks and stones. McCully then fired three times at them. Harry

Oldright, son of Dr. Oldright, received an ugly wound in the leg, and three others were slightly wounded. The gun was loaded with buckshot. Dr. Oldright swore out a warrant against McCully, and he was arraigned at the police court and remanded till to-morrow. The affair has caused great excitement.

A POCKET CLINICAL PNEOGRAPH has been devised by DR. MORTIMER GRANVILLE, and is manufactured by Weiss, of London. It consists of a delicately suspended and counterpoised semi-disc (made of talc), which rises and falls when the instrument is held over the mouth of a recumbent person, or swings vertically when held in front of the mouth of a person sitting or standing. The remainder of the apparatus consists of an arrangement similar to that used in the sphygmograph, by which the smoked paper is moved under a needle attached to the semi-disc. The tracing made by the needle is about as long and of a similar character to that made by the needle of the sphygmograph. The character of expiration is shown by the tracings, and some notable and apparently significant differences are seen in the results obtained in various pulmonary conditions.

THE ENGEL CREMATOR AT MILWAUKEE.—It has been decided to construct in Milwaukee a cremator similar to the one in operation in Minneapolis. It is thought that the cremator will be in operation by November 20. The furnace in Minneapolis is of the Engel pattern with numerous improvements. It is 32 feet long, 8 feet high and 5 feet wide. This is enclosed in a large building, inside of which are elevated drive-ways to the dumping spouts. The cremator is absolutely smokeless and odorless. The process of cremating is one of total destruction, all material being reduced to a fine, light-colored ash. At Minneapolis, while the Health Commissioner of Milwaukee visited the institution, six horses, a cow, and fifty dogs were dumped into the cremator, and in four hours had been reduced to ashes. The cremator, which has two fires, one to consume all noxious fumes, is capable of burning an unlimited amount of garbage or dead animals. Drawings have been made of the parts of the furnace for Dr. McIntosh, of Chicago, who will prepare them for the stereopticon. They will be shown before the annual meeting of the American Public Health Association to be held in Milwaukee the latter part of this month.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting May 16, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

(Concluded from page 602.)

Dr. Swan M. Burnett was called to the Chair. DR. THOMAS C. SMITH read the history of

A CASE OF TRANSVERSE LACERATION OF THE CERVIX UTERI.

(See p. 665.)

DR. BUSEY: The management of the case was correct, and the result was satisfactory. Primary trachelorrhaphy was not now often practiced. It was not always free from danger, and the result was usually unsatisfactory. In very many cases lacerations of the cervix would heal without operative interference. The causes of this particular form of laceration were not easily understood. In this case there was, probably, a combination of circumstances and conditions. The labor was premature. The physiological changes which take place in the tissues of the cervix coincident with the progress of pregnancy had not been completed. The tissues had not reached that stage of maturity which promotes and facilitates dilatation. The amniotic fluid had escaped prematurely and consequently the dilating influence of the bag of waters was absent. There was also probably mal-position of the presenting vertex. In consequence of the rigidity and non-dilatation of the cervix and os extension was delayed or arrested, and the vertex was driven against the thinned posterior wall of the lower uterine segment at the point where the laceration began. In proper position of a vertex presentation in natural labors the vertex should occupy the center of the orificial dilatation. In this case it impinged against the attenuated wall of the lower segment posterior to the cervix. These three conditions may have been present. He suggested them as possible causes of the laceration.

DR. SMITH: Labor had not begun when he first saw the patient. The condition of the cervix was just as Dr. Busey had described it.

DR. KLEINSCHMIDT: Agreed with the explanation offered by Dr. Busey. In support of the statement of the unprepared neck he would call attention to the fact that it is more likely to tear in premature labor and abortions.

DR. SCHAEFFER: Might not the tear have been due to a brittleness or tissue-change at the point of rupture rather than to mal-position?

DR. SMITH: It is not usually found in primiparae.

DR. H. L. E. JOHNSON: Thought the case one

of rupture above the os uteri, and not laceration of the cervix as usually understood. Thought it suggested attempted abortion; that some instrument had been passed into the os rupturing the membranes prematurely and uterus at point of injury, or predisposing it to tear. It is unusual for the membranes to rupture so early in premature labor, that is, before any obliteration of the cervix or dilatation of the os, or with such slight pains, in the absence of mechanical interference. Dr. Smith does not state whether hydramnios or disease of the membranes existed, predisposing to rupture. That point should have been determined. He did not agree with Dr. Busey that rupture was caused by flexion of the head, as that is the normal and first part of the mechanism in L. O. A. presentations. Until flexion did take place the foetal head could not come in contact with the cervix uteri. He did not agree with Dr. Busey that exaggerated flexion caused the trouble, because the more flexion we have the more the small diameter of the head is made to correspond with the diameters of the pelvis. He agreed with Dr. Smith's treatment. The cervix should not have been operated upon at the time, and the result bears this out. He had examined a large number of patients between two and four weeks post-partum, and a large number of lacerations known to have occurred had healed—in some cases extensive bilateral lacerations. He had operated primarily on a case of lacerated cervix and the result was worse than the original injury.

DR. SMITH: In this case there was no deformity of the pelvis. At his second visit the child's head was in the position of flexion and was descending. The rapid transit of the head through the pelvic cavity would indicate that there was no deformity.

DR. C. W. JOHNSTON believed that in a certain proportion of the cases mentioned by Dr. H. L. E. Johnson, and in others of a like nature, where a laceration of the cervix seen immediately after labor, at a later date is found to have disappeared, the patient's condition after healing has taken place is no better than before such healing occurred. The angles of laceration in such cases have been closed by granulation and cicatrization, and it is doubtful if this kind of healing produces a more happy result than no healing at all. Theoretically it was quite possible for lacerations of the cervix to heal by first intention, and clinically cases are occasionally found where such union has occurred. If union by first intention, however, does not occur it may at least be considered immaterial whether healing by second intention subsequently takes place, or whether the parts afterward remain separated. In the light of what we daily observe as to the pathological moment of the so-called cicatricial plug, healing by any means other than first intention is not to be especially wished for. While a certain proportion

of our trachelorrhaphies are undoubtedly performed for the single purpose of uniting edges which have been disunited and have remained apart, yet still in a large number our main effort is directed to the removal of the cicatricial material which has been deposited in the angles of the wound—a form of healing which, as has been said, is of no value to the patient.

DR. H. L. E. JOHNSON: He thought it best to allow the wound to heal by granulation. Did not agree with Dr. J. that the cervix healed by granulation would present a cicatricial line which would give as much disturbance as if it had not healed, and require the operation ultimately. No such operation is required or has ever been done (*viz.*, stitching up a cervix which has healed and have it heal a second time by an operation). It is those cases lasting a long time and not healing, and in which histological changes have taken place and produce local and reflex symptoms which require surgical treatment for their cure. He could not agree with Dr. J. that a cervix could heal by first intention. Thought it impossible—a physical impossibility—as the lochial discharges would pass between the rent, and also the cervix being a muscular or musculo-fibrous organ its normal tonicity and contractility would separate the edges and prevent union by first intention. The pressure of the vaginal walls is insufficient to keep the edges in apposition. Nearly every parturient cervix is lacerated to a greater or less extent. Few require operation. The presence of these cicatricial lines is one of the points to be remembered in forming an opinion as to whether or not the patient had borne children. They cause no symptoms and require no treatment.

Philadelphia County Medical Society.

Stated Meeting, September 12, 1888.

THE PRESIDENT, J. SOLIS COHEN, M.D.,
IN THE CHAIR.

(*Concluded from page 641.*)

SYPHILIS OF THE LARYNX, TRACHEA, AND
BRONCHI.

Diagnosis.—Differential diagnosis between secondary and tertiary lesion is sometimes difficult, particularly in the transitional period especially described by Whistler. The discriminating characteristics are less well marked in the laryngeal syphilis, perhaps, than in any other variety.

It may, however, be broadly stated that secondary lesions, erythematous, papular condylomatus or paralytic, are superficial; and that tertiary lesions are gummatous, ulcerous, carious, necrotic and deep-seated. Laryngitis occurring within a few months of infection is almost invariably secondary. Lesions appearing before the

termination of the third year are presumptive secondary; those appearing within the third year, secondary or transitional; and those appearing after the termination of the third year, tertiary. Nevertheless, secondary lesions may be ulcerous, and undoubted tertiary manifestations have been recognized even within nine months of infection.

The history of the case, and the previous or actual presence of manifestations of syphilis elsewhere, are the main positive factors in the diagnosis of specificity, especially in the earlier stages of either variety. The later lesions of tertiary syphilis are often sufficiently characteristic; sometimes not at all so. In cases of doubt, antisyphilitic treatment will almost always detect a lesion of syphilitic origin, but not invariably. Hence, in instances of strong suspicion, the various methods of antisyphilitic medication should be thoroughly tried before the test is abandoned. This suspicion is justifiable in cases of obstinate chronic laryngitis, whether ulcerative or not, in individuals in whom no other appreciable local or constitutional cause can be detected.

Laryngoscopic inspection is an invaluable aid in diagnosis; though practically indispensable, it is inadequate for fully appreciating the extent of deeply seated lesions; and its revelations are not always sufficient to establish the diagnosis in the absence of corroborative lesions elsewhere. Erythematous and catarrhal inflammation of secondary syphilis, when diffuse, are not to the ordinary eye distinguishable from similar non-specific conditions. Circumscribed erythema, though usual in syphilis, occurs in non-specific laryngitis also, consequently that condition alone is insufficient for discrimination. Patchy erythema on the vocal bands, and elsewhere, may be regarded as characteristic. Not so, however, the shaded pigmentations at the extremities of the vocal bands.

Symmetric bilateral localization of erythematous and other patches is highly characteristic of secondary syphilis; but a contrary condition by no means excludes the diagnosis. Isolated bilateral congestions of the supra-arytenoid structures and of the Wrisbergii has been cited as pathognomonic. Nothing can be more fallacious or misleading. Enlarged inguinal and post-cervical glands furnish excellent corroborative testimony of syphilis.

Papules, or condylomata, upon an erythematous mucous membrane, are to be considered pathognomonic. Their recognition may require an exceptionally good light on the one hand, or repeated examinations on the other. They must be carefully discriminated from minute collections of mucus or of saliva.

Diffuse gummosus infiltration is to be distinguished first from inflammatory syphilitic infiltration by the coexistence of gummosus processes elsewhere, its more circumscribed contour, and its sharper definition. Differential diagnosis is much easier after it has reached the stages of liquefaction and ulceration.

Syphilitic ulceration usually proceeds from above downward, rarely in the opposite direction, and often in extension from ulceration in the pharynx. Repair usually proceeds from below upward. Apart from these guides there is nothing positively characteristic enough to determine an ulceration to be syphilitic in character by mere inspection.

The absence of pain has been regarded as characteristic; but, on the one hand, carcinomatous ulceration often exists without pain, and on the other hand, the ulcerative lesions of syphilis are sometimes attended with lancinating pains of the most severe character.

In the gummatous stage of tertiary syphilis diagnosis is not difficult. They may be confounded with other neoplasms, and with abscess. In cases of doubt, antisyphilitic treatment should clear up the diagnosis. The physical distinction between gummata and condylomata may in some instances be obscure (Semon).

The main reason why gummata are so infrequently seen as to have led some observers to an erroneous opinion as to their rarity, is that many patients do not present themselves until after the stages of liquefaction and ulceration have become established. When this stage has not been observed, and the larynx, as is more usual, is not inspected until after ulceration has considerably progressed, the appearances are not always characteristic. They may be confounded with those of lupus, carcinoma and tuberculosis. The general diathesis, the clinical history, the existence of enlarged submaxillary and post-cervical lymphatic glands, the character of concomitant affections of the skin and mucous membrane, the aspect of the patient, assist in discrimination. Sometimes, too, tuberculous and syphilitic lesions coexist.

The typical tertiary ulcer, sharply defined, and below the surface of the mucous membrane, is more or less circular when recent, more or less crenated when reparation is taking place at one or more points of the circumference, and looking as though cut out with a punch when in cedematous tissues. Its borders are sharp, elevated, but not often undermined, and more or less rounded in their visible outline, and are surrounded by a more or less circumscribed inflammatory areola in the mucous membrane. The bottom feels hard to the probe on palpation. The bed of the ulcer is grayish, or lardaceous, yellow from fatty detritus, and covered with adherent concrete pus, through which, here and there, prominent rosy granulations often project. The surrounding tumefaction is harder and more indurated than in other varieties of ulcer. Purulent accumulations are rather indicative of the syphilitic process. At a later date denuded or necrosed cartilage may be visible in suitably located ulcers.

In cases in which neoplasms have become developed at the seat of existing ulcerations, or of

cicatrizated ulcerations or erosions, it is often impossible to pronounce as to their nature, even by the test of antisymphilitic treatment. Not only do such neoplasms exist independently of the syphilitic process, or as the result of irritation provoked by syphilitic process in the vicinity, but, when undoubtedly syphilitic in origin, they rarely disappear under specific medication. Tertiary syphilis is usually recognizable in the stages of œdema of the larynx; and almost always in the reparative stages of cicatrization, or in the subsequent stages of stenosis, whether from cicatricial retraction or from organization of effused products.

Prognosis.—Secondary lesions, even when ulcerative, are most frequently curable without cicatrix or without any other sequel. Exulceration of the vocal bands sometimes leaves permanent defect of tissue. The prognosis is good except during temporary conditions of œdema, when it may be grave for the time being. The inflammatory congestion and turgescence is more chronic than in catarrhal inflammations, and are often recurrent. Actual hyperplasia is apt to remain permanent, even after cure of the syphilitic lesion, despite the most assiduous treatment; and when it occupies a vocal band the voice may be permanently impaired. The singing voice may remain imperfect, although the conversational voice be fully restored; the injured tissues being unequal to the nicety of adjustment requisite for cantation.

In tertiary lesions the prognosis depends mainly on two factors: First, on the impairment of the general health, and the significance of lesions elsewhere, especially in the brain and meninges, and in other important organs. Second, in the extent of ulceration and the character of deformation or stricture which may follow. Temporary gravity exists in the presence of œdema; during the period of exfoliation of necrosed cartilages, and in acute bilateral paralysis of the dilator muscle, the result of exposure to cold or other cause, or to unilateral paralyses when the opposite side is immobile from gumma, or from crico-arytenoid ankylosis (Charazac: *Rev. Mens. de Lar.*, Sept., 1884), any of which conditions may demand prompt tracheotomy to prevent death by suffocation. Ulcerative lesions of the trachea may be fatal by hæmorrhage from penetration of large blood-vessels; by pneumonia from access of food through perforation of œsophagus (Berger); or by septic processes due to rupture of the mediastinum. Permanent impairment of the voice is to be expected in all cases in which the vocal bands undergo serious injury, and in many in which permanent changes are likely to take place in other structures contiguous to the glottis.

Gluttony is rarely affected, even after complete destruction of the epiglottis; and in exceptional cases difficulty is mainly confined to fluids swallowed without deliberation.

Stricture rapidly supervening upon hyperplasia is often amenable to active treatment, sometimes with striking rapidity (Krishaber: *loc. cit.*); but the more frequent stricture of slow progression can only exceptionally be brought under control.

Serious danger attends even cure of extensive ulcerative lesions in the interior of the larynx, for the resulting stricture, if severe, is likely to necessitate tracheotomy, with great probability of permanent retention of a canula. It is rarely amenable even to excision of cicatricial tissue by external access. Subglottic stricture is much more serious than supraglottic, and tracheal far more serious than laryngeal stricture. Stricture of the trachea, when low down, is practically insusceptible of amelioration; and death by slow apnoea, or by sudden suffocation, is the usual outcome.

When the syphilitic cachexia has advanced so far as to have produced incurable lesions in important viscera or in the cerebrum, death may ensue from these causes despite sustained cure of syphilitic lesions in the larynx. In cases complicated with paralysis of the dilator muscles of the larynx from cerebral lesion, the death may take place by occlusion of the glottis and suffocation, or by encephalitis and coma.

In hereditary syphilis the prognosis is very much the same as in tertiary syphilis; being much worse in infancy and childhood than in more delayed manifestations. The small size of the larynx renders stricture and intercurrent œdema far more significant; and the tendency to spasm of the larynx inherent to all laryngeal affections in childhood presents an additional element of danger. Fatal issues from these three causes are not infrequent. An element of uncertainty as to the final result remains in all varieties of syphilis of the larynx and trachea, due to the fact that permanent liability to recurrence prevails in many instances, despite the best apparent results of the most judicious treatment; and often, too, after prolonged intervals of immunity from any further manifestations of constitutional syphilis.

Treatment.—Fortunately, lesions even of great destructive and menacing tendency are amenable, as a rule, to treatment; often promptly.

The treatment, broadly stated, is that applicable to constitutional syphilis in general; mercury in the early manifestations and iodides in the late ones. In many of the latter, if not most, the mixed treatment combining the two specifics is the most serviceable. In congenital syphilis the gray powder is believed to be the most efficacious form of the drug. While willing to admit that secondary lesions often subside without traces and without much risk of subsequent tertiary manifestations, although mercury be withheld, I deem it the more prudent practice, and therefore best practice, to employ mercury; in the belief that its specific constitutional influence affords

the patient better protection as to future manifestations. As to the value of iodides in tertiary syphilis, there is no difference of opinion. Tonics are often indicated. All sources of irritation, exposures, excessive use of the voice, alcohol and tobacco, are to be avoided.

Sedative inhalations in vapor or spray are often of great topical benefit in subduing collateral inflammation; and antiseptic inhalations are indicated in gangrenous cases.

Secondary syphilis. Mercury may be administered by the stomach or by the skin. When the lesions are moderately severe or slow in progress, the corrosive chloride may be administered in doses of from $\frac{1}{16}$ to $\frac{1}{8}$ grain, three times a day. The green iodide may be given in doses gradually increased from $\frac{1}{6}$ of a grain three times a day to the point of tolerance. The addition of extract of belladonna may cause it to be better borne by the stomach. In individuals in whom serious gastric disturbance is produced before any specific effect has been noted, and in seriously severe cases and cases of rapid progress, inunctions of a drachm of mercurial ointment daily are preferable, or pencillings with solutions of oleate of mercury in oleic acid, 10 per cent. Lewin prefers hypodermatic injections of corrosive chloride. Concurrent stomatitis is to be combated by the internal administration of potassium chloride, or the use of a saturated solution of that salt, or of a weak solution of potassium permanganate as a mouthwash. It is hardly necessary at the present day to mention that salivation is to be avoided. In my own experience topical medication is, as a rule, superfluous in non-ulcerative secondary syphilis, and often unnecessary in the presence of ulceration. When topical medication seems necessary, inhalations of sprays of corrosive chloride (Demarquay) half an ounce or more daily of a solution containing 1 grain to 4 ounces of water are useful locally and constitutionally. In particularly obstinate conditions, especially in the presence of hyperplasias, the topical applications of solutions of iodine and potassium iodide in glycerine (Schnitzler) half a drachm and a drachm respectively to the ounce, made daily or at longer intervals sometimes accelerates the cure.

In the transitional stage and in the tertiary stages, the mixed treatment has been the most beneficial in my own practice; $\frac{1}{16}$ to $\frac{1}{8}$ of a grain of the corrosive chloride, 5 to 10 grains of potassium iodide in half an ounce or more of the compound syrup of sassa-parilla, three times a day. It may sometimes be necessary to increase the dose of the iodide up to the point of tolerance. In such cases the "grain to drop" solution is the most convenient preparation. The danger of inducing œdema of the larynx by sudden large doses must not be forgotten. When necessary sodium or ammonium iodide may be substituted for the potassium salt, or hydriodic acid may be employed.

In the presence of œdema, hypodermatic injections of corrosive chloride (Lewin), $\frac{1}{32}$ gr., twice a day for a day or two, and after improvement, at intervals of three days or more, have proved quite efficacious. If amelioration is not prompt, and if the patient cannot be carefully watched by an attendant competent to interfere in an emergency, it is best, in my opinion, to perform prophylactic tracheotomy, instead of awaiting its urgent indication. The same rule is applicable to threatening cases of extensive hyperplasia, whether from specific or from non-specific infiltrations.

Nevertheless, remarkably happy results, even in urgent cases of these kinds, have frequently followed active treatment by inunction (Krishaber) and by hypodermatic injection (Lewin). Intubation of the larynx from the mouth (O'Dwyer) has been recommended as applicable in many instances of œdema and constriction heretofore treated by tracheotomy. As yet, I know of no experience with intubation in this special connection.

Ulcerations heal more promptly when the constitutional treatment is seconded by topical cauterizations with fused silver nitrate, or with mercuric nitrate, 1 part to from 4 to 10 of water, or with cupric sulphate in crystal, or saturated solution. Chromic acid, 1 part in from 5 to 8 of water, has long been extolled (Isambert). Some prefer iodoform (Morgan). On the other hand, extensive ulceration often heals promptly under the influence of constitutional treatment alone.

Vegetations, detached flaps of mucous membrane, and semi-detached fragments of necrosed cartilage, call for operative removal with cutting forceps, evulsion forceps or snares, as may be most convenient, when these products are so located as to interfere with freedom of respiration or to threaten such interference. When these manipulations are impracticable, tracheotomy may be requisite. When tracheotomy has been performed under any of the conditions mentioned, the canula is to be removed as soon as it has become apparent that its retention is no longer essential to the safety of the patient. Cicatricial stricture of the larynx may be treated by the introduction of the intubation tube through the natural passages (O'Dwyer). This treatment may be applicable to stricture high up in the trachea. Stricture in the middle portion of the trachea requires low tracheotomy and the introduction of a tube long enough to reach beyond the constriction. Stricture at the bifurcation is hopeless.

Paralyses, even those of the posterior crico-arytenoids, are usually amenable to anti-syphilitic treatment even when of considerable standing. This fact seems to indicate that the atrophy found in necrotic paralysis is not due to simple inaction of the muscle, but rather to trophic impairments of neurotic origin. Electrization may be employed when relief does not ensue from systemic medication.

Membranous webs, occluding the glottis from side to side, are divided by incision or by galvanoelectric-cautery, the edges cauterized, and readherence prevented, if possible, by frequent introduction of dilating sounds. These laryngoscopic operations are often rendered futile by insurmountable tendency to recicatization, whereby the morbid condition is reproduced. Success in cases of this kind would seem to require exposure of the interior of the larynx by external division of the thyroid cartilage, and excision of the whole of the cicatricial tissue (Mackenzie).¹

When syphilitic laryngitis has existed for a long time, such an amount of destruction may have taken place, and such a degree of systemic poisoning, as to render recovery impossible. The constrictions produced by the cicatrices of extensive ulcers, and the adhesions between adjoining surfaces, in cases that recover, are often such as to render tracheotomy necessary, with the permanent use of the tube; for the constrictions following syphilis are not, as a rule, amenable to dilatation.

Threatened asphyxia or unconquerable dyspnoea, from gumma, loose cartilage, morbid growth, abscess, or œdema, may necessitate tracheotomy. Tracheotomy for the purpose of conquering dyspnoea due to tumefactions in the larynx is perfectly justifiable and usually successful. It is likewise justifiable for the mere purpose of securing rest to the organ—much more so, indeed, than in analogous conditions attending tuberculosis.

The treatment for local adhesions consists in relieving the tension as far as possible by laryngoscopic division of the constricting bands of tissue, with knife or with electric cautery, and then cauterizing and recauterizing the adjacent surfaces, to prevent fresh adhesions. These cases require careful watching and prompt attention to overcome the disposition to recurrence, which is very apt to take place in spite of all efforts. When the epiglottis is implicated, much good can be done by teaching the patient to move the organ frequently by means of his forefinger.

In a case of stenosis due to "concentric hyperchondrosis," as a result of the hyperplastic chondro-perichondritis, Prof. Heine performed a successful resection of the anterior portion of the thyroid cartilage, splitting that structure in the middle line, separating the perichondrium and superjacent soft tissues, to the distance of one-half its surface on the two sides, with the elevator, and then removing the denuded portions by longitudinal section with bone forceps. The patient rallied so well from the operation that an artificial vocal apparatus could be substituted for the ordinary canula on the fifth day. He became able to resume work after a while; but the disease made new inroads, and he died, 11 months later, in an advanced stage of tuberculosis.

Despite the most judicious treatment, and the most satisfactory immediate results, recurrence or recrudescence takes place in many instances at variable intervals, requiring resumption of specific treatment. The most satisfactory results claimed by any writer have been in cases actively treated by Lewin with hypodermatic injections. It is advisable to keep patients under observation for many months after active treatment has been discontinued. Mercuric iodide (biniodide) in small doses, one-twentieth to one-tenth of a grain, three times daily, may judiciously be given for prolonged periods during which apparent health exists. Potassium iodide, in diminishing doses, should be administered from time to time for a few days every month until the patient begins to show susceptibility to physiological effects from small doses; and then this susceptibility should be tested from time to time at intervals of a few months. Such supervision for two years at least seems to present the best prospect for riddance from the diathesis.

It may be mentioned in conclusion that, under intercurrent attacks of erysipelas, obstinate cases of tertiary syphilis of the larynx and trachea have undergone cure after having resisted all medicinal treatment.

Obstetrical Society of Philadelphia.

Stated Meeting, October 4, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D.,
IN THE CHAIR.

DR. JOSEPH PRICE reported his

RECENT WORK IN ABDOMINAL SURGERY.

There were 65 cases of operation, with 8 deaths, as follows:

Double pyosalpinx with double ovarian cyst and purulent peritonitis. Autopsy showed pyonephritis—7 days. Extra-uterine pregnancy. Moribund 36 hours before operation, 24 hours. Supra-vaginal hysterectomy for sarcoma of uterus and all abdominal viscera—4 days. Resection 20 inches of large and small intestine for carcinoma. Hopeless. 26 hours. Exploration and drainage. Large multilocular cyst right ovary. General malignancy. Parent cyst evacuated. Hopeless. Operation for temporary relief—4 days. Perforating typhoid ulcer. Evacuation of muddy fluid and lymph. Reacted well for 12 hours—36 hours. Hysterectomy for sarcoma of uterus and left ovary. Bowel involved—3d day. Strangulation of ileum. Released adhesions. Recurring attacks of collapse for three days before operation. Hopeless—25 hours. Total deaths, 8.

The mortality list gives a small group of these hopeless cases we are called upon to give some relief. In short they simply command you to do

¹ Med. Times and Gazette, August 19, 1871, p. 218.

something for relief. If there is one chance they demand it. As a rule they have been seen by one or many physicians, and have refused any early operative interference, or delay has been advised. We find in such cases just those pathological conditions that should at least induce us to recommend, nay more, to insist and urge the removal of all such murderous diseases. If all operators and practitioners recognized the importance of early operation in these and analogous conditions as they do in strangulated hernia, the mortality would be greatly reduced and a world of suffering saved. Early interference in ovarian cystoma is generally taught now. The importance of the early removal of the appendages in fibroid and myomatous uteri has not received that attention it deserves. The tubes and ovaries are diseased in a majority of these cases, and much of the suffering is due to their pathological condition. The mortality and the suffering in pelvic inflammations, the sequelæ of gonorrhœa, are very great, and the country is covered with neglected cases. If cases carrying typical large pus tubes in this city were distributed there would be at least one in every street, alley and court. In my experience with small tumors in young women, I have been convinced of the propriety of early removal on account of accidents incident to their development and growth. Many are dermoids and prone to strangulation and suppuration, recurring attacks of localized peritonitis complicating their condition. I have been called upon to operate upon at least six of these young women in bed, emaciated, with quick pulse and high temperature. The general condition bad for so serious an operation as abdominal section. If these operations are done early while the patient is in fair condition, every risk of the operation is minimized—short anæsthesia, short incision, rapid enucleation, secure ligaturing, thorough irrigation and good drainage—the mortality will be very low and the much complicated and desperate cases rare.

DR. J. M. BALDY thought that such an opportunity, as was now presented by one of the cases presented by Dr. Price, should not be neglected, and that he would say a word about early operation in cases of tubal disease. A great deal of commendation had been expressed of these operations on the ground that very little trouble was likely to arise subsequently. The case referred to had been under the care of Dr. Daland and that he had had the pleasure of examining the post-mortem specimens with the doctor. The specimens, together with the clinical history, set the subject forward in a very vivid way. The history of the case was from the beginning one of tubal inflammatory trouble. Seven years before her last illness she had fallen into the hands of one of the oldest and best known gynecologists in the city, but who is not an operator. Dilatation and other well-known methods of treatment were

persisted in for months. Her real condition was evidently not recognized. She went on from bad to worse and finally in her last illness fell into the hands of Dr. Daland. She fell into collapse three times during this sickness and an operation was urged both by her attendant and the consulting surgeon; their hands were, however, tied by the consulting physicians. At the last moment an operation was agreed to but the patient died. The specimens and autopsy showed double pyosalpinx, with both ends of both tubes impervious. Intestines were bound down in a mass on the tubes, and strangulation had occurred. Such a condition of affairs should not have been overlooked by any one, and an operation was strongly indicated. The case operated on any time during those seven years would have been saved with little risk. The case ran a course quite common, and which can only be prevented by early operation. In answer to a question from Dr. DaCosta as to how he knew there had been this condition seven years ago, he said that the woman had suffered continually with the same symptoms from the first. That she had either had the same condition then or it had been aggravated from a mild to a severe form of the disease by the treatment she had received.

DR. WM. GOODELL could corroborate the statement that the appendages were diseased in fibroid tumors. The larger the tumor the more likely are the ovaries and tubes to be diseased and the harder to remove. He was not sure but that in young women where the tumor was growing rapidly, it would not be better to remove the appendages early. Some years ago he had thought that dermoid tumors were solitary, but that two years ago he had removed a dermoid from each side, and had since noticed in the literature a number of others reported.

DR. M. PRICE said that the delay in treatment of many of these cases was due to the erroneous teaching in regard to inflammatory pelvic troubles. His belief was firmly fixed that they began as tubal trouble. In such cases leakage took place and set up other inflammatory trouble. He had been called in consultation to a case recently which was being treated as cellulitis, as usual. The patient had been an invalid for years; had been blistered, etc. The attack was relieved temporarily, but had subsequently returned and she was now in a bad septic condition. The tubes contain pus and the woman will either die of her trouble or be relieved by an operation. Her attending physician is a good man, but he has been taught that every trouble in the pelvis of an inflammatory character was cellulitis.

DR. HOFFMAN had lately come across a patient with fibroid tumor, who had been operated on three years before, but whose appendages had not been removed. She had great pain, and in one of our large institutions her trouble had been

pronounced *uterine neuralgia*. The operation revealed the colon adherent throughout almost its whole extent. Both appendages were diseased, and I had absolutely to dig them out. These difficulties probably caused the former operator to stop, and he would not have overcome them had it not been for the kind aid of Dr. Price.

DR. THEOPHILUS PARVIN exhibited a specimen of extra-uterine pregnancy removed by Mr. Tait in the latter part of August. Pregnancy was supposed to have advanced six or seven weeks. Rupture had taken place two days before the operation. The patient was doing well when he last heard of her condition, four days after the operation. He thought that Mr. Tait was really the most wonderfully expert abdominal surgeon he had ever seen. In his work no antiseptics are used; perfect cleansing of the hands with soap, water, brush and towel; perfect cleansing of the abdomen; incision through the skin and underlying tissues; hæmostatic forceps used if necessary, but frequently not required; the use of forceps to take up the tissues as the peritoneum is approached; the raising up of the peritoneum almost an inch so that there is no risk of injuring anything beneath the membrane; incision into the peritoneum; the moment the incision is made the introduction of one or two fingers or rather the index finger and the thumb. In this case the diagnosis was not positive, only probable, before opening the abdomen, but as soon as he had introduced the finger into the abdominal cavity, he said that it was a case of extra-uterine pregnancy with rupture of the tube. It took probably five minutes to bring up the ruptured cyst and ligate the tube with the Staffordshire knot. After removing the tube and ovary, water was poured in through a funnel to which was attached a rubber tube with a nozzle. The metal nozzle was pushed around in all parts of the abdomen so as to wash out all of the clots. In this particular case two pitchers full of water were used, a drainage tube was introduced and three stitches closed the abdominal incision. This patient did not have a temperature above 100°, and when seen three days later her recovery seemed almost absolutely certain.

DR. PARVIN also exhibited the following instruments:

THE AXIS TRACTION FORCEPS OF DR.
STEPHENSON,

Professor of Obstetrics in the University of Aberdeen. The forceps closely resembled the Simpson, being only a little longer and the pelvic curve greater. The traction is hooked on in front of the lock after the forceps is applied.

{ DELORE'S FLEXIBLE BLUNT HOOK; PAJOT'S
CURETTE FOR REMOVING THE REMAINS
OF A MISCARRIAGE,

consisting of a curette, the curve of which may

be altered while the instrument is within the cavity of the uterus and to which different sized extremities may be attached.

DOLÉRI'S ÉCOUVILLON

for brushing out the cavity of the uterus after incomplete abortion; before introducing the instrument it is dipped in an antiseptic solution. To this treatment its inventor has given the name of *écouvillonnage*. Sometimes the use of the curette precedes that of the *écouvillon*.

MATHIEU'S INSTRUMENT FOR WASHING OUT THE
UTERUS,

consisting of two tubes, lying closely together with small openings on their approximated surface. After introduction into the uterus the two tubes are separated by means of a screw, leaving a space for the water to flow from the uterus.

DR. WM. GOODELL thought that after seeing Stephenson's forceps he could justly lay claim to all priority in the axis-traction device. Many years ago in his work at the Preston Retreat, he found that his back so often gave out while making axis-traction with his left hand on the lock of the ordinary forceps, that he sewed a stirrup to the end of a leather strap. The other end of the strap he wound around the forceps handles near the lock and in the stirrup he placed his foot. He usually hung the strap so near the floor, that his heel rested on the latter, the traction force being made merely with the toes or ball of the foot. He thought Dr. Price had probably seen this impromptu device hanging on a gas fixture in the lying-in-room of the retreat. Of course the woman lay on her back with her nates drawn over the edges of the bed.

DR. PRICE remarked that he had seen the device spoken of by Dr. Goodell.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Akromeglia—Infantile Hemiplegia with Epilepsy.

The first meeting of the New York County Medical Association for the season of 1888-89 was signalized by the presentation of the first case ever known on this side the water of the remarkable disease described for the first time in 1886 by Maril under the name of akromeglia. Dr. Adler, who exhibited it, first gave a brief sketch of the few cases of the disease which have been reported in Europe, and then went on to say that the designation of akromeglia, which simply meant enlarged extremities, was not a very satisfactory one; but it had now been generally accepted and,

in our present total lack of knowledge regarding the pathology of this affection, it would perhaps answer as well as any other.

The patient, a female, was a native of Germany, 34 years of age and married, and first came under observation in February last, at the German Hospital. Her mother had died from the effects of a fall, and her father was still living. She also had three brothers living, all in the enjoyment of robust health. She was strong and healthy, she stated, up to her 18th or 20th year, the time of the onset of her present trouble not being very clearly remembered. She began to menstruate in her 15th year, but the periods were always very irregular, and at the end of three years finally disappeared. She thought she was about 20 when she first noticed that her feet would swell from time to time; although a bandage or tight-fitting shoe, she said, would always readily reduce the swelling. About this time she also noticed some enlargement of the submaxillary glands.

The patient was unable to give any exact history of the present abnormal growth. She was married in her 20th year, and when she was 23 her wedding ring became so deeply imbedded in the tissues of the finger that it had to be sawed off. What she principally complained of all along was pain in the back and great weakness, and she was also subject to frequent attacks of migraine. The pain in the back she attributed to a long ride, from which she never recuperated. She had for some time been unable to walk, and spent most of her time in a semi-recumbent position.

On looking at the woman, Dr. Adler said, one was at once struck with the immense size of the head and the marked projection of the lower jaw. At the first glance it looked like a case of myxœdema or one in which there had been complete extirpation of the thyroid gland. The entire cranium was greatly enlarged, and the protuberance of the occiput was especially marked. The lower jaw was immense, and the tongue was greatly hypertrophied and flabby. There was no alteration in the teeth, except that those of the lower jaw were separated to some extent from each other; and the hair was abundant. All of the lymphatics of the neck were greatly enlarged. On a superficial inspection there was an apparent lack of the thyroid gland, but a more careful examination, especially during the act of deglutition, showed that the left lobe and the isthmus could still be distinctly felt, although the right lobe seemed to be wanting. No trace of the thymus gland could be detected. The clavicles were markedly enlarged, especially at their sternal extremities. The ribs were also greatly enlarged, and commencing kyphosis and a peculiar bulging shape of the chest, due to the costal hyperplasia, could be observed. There was comparatively little adipose tissue anywhere. The bones of the

arm and forearm also showed enlargement of the extremities, and there was some reason to believe that slight lengthening of the shaft had also taken place. The hands were also immensely enlarged, although there was no deformity of the nails, as has been noted in some of the other cases of akromeglia. The muscles everywhere were flabby and atrophied. The skin was markedly hypertrophied, but remained for the most part soft and pliant.

The same general condition of affairs was found in the pelvis and lower extremities. The feet were enlarged even more than the hands, being simply colossal in size, and in the legs there was also enormous hyperplasia of the epiphyseal regions and of the patellæ. It was noticed that there was marked hyperæsthesia in all the hypertrophied parts; even slight pressure causing the patient to wince. As regards the internal organs, a careful ophthalmoscopic examination failed to reveal the presence of any organic disease. Repeated chemical and microscopic examinations of the urine showed no evidence of any kidney trouble, and the red and white corpuscles of the blood were both found to be normal in number and appearance; although to the eye the patient seemed anæmic. The heart and lungs, and all the other organs, as far as could be ascertained, were entirely normal. The appetite was fairly good, but the bowels showed a tendency to obstinate constipation.

The electrical examination showed some departures from the normal. The resistance of the skin to the faradic current was enormous. Otherwise the cutaneous sensibility was not diminished. As regards the galvanic current, there was considerable diminution of electrical excitability, which was most marked in the peronei of both lower extremities. Still, there was no evidence of any degeneration going on in the nerves, and the want of electrical excitability could well be explained on other grounds. There was evidence of well-marked psychical degeneration in the patient, who was described as having been a bright and lively girl, but was very dull and apathetic.

Dr. Adler then made some general remarks on akromeglia, founded on the observations of European authorities. In most particulars, he said, this case corresponded very closely with those met with abroad, though there was one feature which was peculiar to it alone, viz.: the widespread hyperplasia of the lymphatics. As regards the post-mortem appearances in this affection, Klebs was the only author who had made anything like a satisfactory report. He had found a general hyperplasia of the connective tissue and marked proliferation of the blood-vessels. There was also enlargement of the various nerves, especially the ganglia of the sympathetic. In the brain he found well-marked hyperplasia of the hypophysis cerebri, and the question naturally arose whether there

was any connection between the enlarged hypophysis and the enlargement of the nerves. Klebs was inclined to attribute the disease to the proliferation of blood-vessels, but this was purely fanciful and speculative, and at present the true pathology remains shrouded in profound mystery. As regards the matter of prognosis, this was not particularly bad so far as life was concerned. In Europe two of the cases which had been first observed as long ago as 1867 were still alive. In some of the cases there were abnormal conditions of the heart. In most of them the thyroid gland was diminished in size or apparently wanting altogether; but in two it was markedly hypertrophied and was no doubt diseased. Amenorrhœa was a constant characteristic of the disease.

Dr. W. R. Birdsall expressed the great pleasure it afforded him to see this case, the first of its kind ever recorded in America. He did not think he could throw any light on the pathology; though there seemed to him to be some mysterious connection between akromeglia, myxœdema and extirpation of the thyroid. He said that he had at present under observation a young girl suffering from amenorrhœa who had developed some enlargement of the extremities of the phalanges of the hands, and to a less extent of those of the feet. It might possibly be an incipient case of akromeglia, but it was as yet too early to form a definite opinion in regard to it. As regards the electrical reactions in Dr. Adler's case, he thought that we ought to be very guarded in drawing conclusions.

Dr. Adler said that it seemed to him that the hyperplasia in and about the nerves might of itself offer a sufficient explanation of the diminished electrical excitability.

Dr. A. L. Carroll thought that profound gratitude was due Dr. Adler for the most admirable clinical demonstration which he had given of his unique case. Ever since he had first seen an account of this new disease in the journals he had been waiting in the hope that some one would find a specimen of it in this country, and it now afforded him extreme pleasure to have the opportunity of seeing the first case reported.

The question of treatment having been suggested, Dr. Adler stated that, in the total absence of knowledge of the cause of the disease, all treatment, so far as interference with its progress was concerned, was without avail. The patient was simply kept in bed and her functions regulated as well as possible. The attacks of migraine to which he had referred could always be sufficiently combated with antipyrin.

Dr. J. Lewis Smith then presented an interesting case of infantile hemiplegia accompanied with epilepsy and characterized by marked spastic contractions and slight athetoid movements in the fingers. In connection with it he read a communication concerning the case prepared, at his re-

quest, by Dr. M. Allen Starr, the well-known neurologist, in which the latter gave a *résumé* of some of the latest researches by Seeligmeyer and other authorities in regard to such conditions. In it he stated that all recent writers mention athetosis as a frequent complication of spastic infantile hemiplegia connected with epilepsy. On the invitation of Dr. Smith Dr. Birdsall then gave a clinical demonstration of the case and made some remarks upon it, in the course of which he stated that there was no doubt a destruction of tissue in the cortical areas, by reason of which the impulses from the brain were transmitted irregularly, and not in a coördinate manner. The last paper of the evening was by Dr. Daniel Brown, on "The Arrest of Secretions in the Eruptive Fevers," and this led to a valuable discussion by a considerable number of speakers.

P. B. P.

BOOK REVIEWS.

PTOMAINES AND LEUCOMAINES, or the Putrefactive and Physiological Alkaloids. By VICTOR C. VAUGHAN, Ph.D., M.D., and FREDERICK G. NOVY, M.S. Philadelphia: Lea Bros. & Co. 8vo, pp. 316.

The subject of this volume is one of the greatest interest, for without doubt our knowledge of the causation of disease can be greatly increased by a more detailed knowledge of it. The full importance of ptomaines and leucomaines has been so recently appreciated that as yet many of the facts known to us are so scattered and isolated that a scientific appreciation of them is impossible. The present work will undoubtedly aid much in diffusing a knowledge of these substances in the profession, and in placing before the searchers after new facts all that pertains to the subject up to the present time.

The volume is devoted almost exclusively to the chemistry of these alkaloids. One can not but be impressed with our lack of knowledge of the physiological action of these alkaloids. This is a field widely open to the investigator, and one from which a rich harvest can be gathered.

No one in our country is better adapted to produce a work upon this subject than Professor Vaughan, for he has become an authority upon it from his original investigations into it, especially from those in regard to tyrotoxin, which he discovered.

THE APPLIED ANATOMY OF THE NERVOUS SYSTEM. By AMBROSE L. RAMSEY, A.M., M.D., etc. Second Edition. 8vo, pp. 791. New York: D. Appleton & Co. 1888. Chicago: W. T. Keener.

This work will be found exceedingly useful by all who come frequently in contact with those suf-

fering from disease of the nervous system. Its object is to aid in the anatomical diagnosis of such diseases. It is unusually complete in its treatment of the subject. Numerous diagrams and illustrations have been introduced in order to make explanations clear.

The present, although called a new edition, is practically a new book. It is much larger and for the most part newly written. If we were to make any criticism upon the book, it would be to urge the author to condense the subject-matter. So much of the substance of the work deals with the physiology of the nervous system that the title is somewhat misleading as regards its scope.

MISCELLANEOUS.

THE PREVENTION OF TUBERCULAR DISEASE.—The resolutions adopted by the Congress for the Study of Tuberculosis which assembled recently in Paris afford striking proof of the change which has come over popular pathological theories as to the etiology of this ubiquitous disease. It is not many years since the communicable nature of tuberculosis, and even the specificity of the process, were generally denied; now we find these two propositions taken as axiomatic, and important practical conclusions drawn therefrom to form the basis for legislation. In a courageous willingness promptly to accept the logical consequences of scientific discoveries, the French have frequently set an example which can only excite our admiration. Public opinion in this country and in our colonies moves more slowly, and the respect for vested interests leads to the perpetuation of practices which are injurious not only to the public health but, in the long run, to those interests which it is intended to conserve.

The first resolution led up to a *coup de théâtre*, no doubt carefully prepared beforehand. This resolution, which was adopted at an early sitting of the Congress, declared:

"That every means, including the compensation of owners, should be taken to bring about the general application of the principle that all meat derived from tubercular animals, whatever the gravity of the specific lesions found in these animals, should be seized and totally destroyed."

Now for the last three years the French Government has had in contemplation the advisability of applying the provisions of a law for the prevention of the spread of the contagious diseases of animals, passed in 1881, to the case of tuberculosis, and the necessary decree was actually signed by the President of the Republic during the session of the Congress. This decree is in many respects a remarkable document; here we are only concerned with its sanitary significance. It provides that every ox, cow, or other animal of the bovine species found to be suffering from tuberculosis shall be isolated, and that the veterinary inspector shall be present when it is slaughtered, and make a report on the *post-mortem* appearances. The meat is to be condemned if the tubercular lesions are generalized; that is to say, if they are not confined to the viscera and their lymphatics, or if, being confined to the viscera, the greater part of one organ has been invaded, or if the serous surface is affected. The sale of the milk of tubercular cows is absolutely prohibited, and it can only be used for feeding animals after it has been boiled. No provision exists for compensating the owners of condemned animals, and the possibility of creating a fund for this purpose is at present much discussed. One suggestion is to require an owner to provide himself with a

"certificate of origin" for each animal which he possesses. It has been calculated that a fee of one franc would be sufficient to raise a fund large enough to compensate all owners, while the existence of the certificate would greatly facilitate the investigation of the source of epizootic outbreaks. Another plan which has been suggested is compulsory insurance.

Two other resolutions adopted by the Congress at the end of its last session are interesting as showing the direction in which public opinion is advancing. One of these was:

"That dairies ought to be subjected to a special system of inspection, with the object of ascertaining that the cows are not suffering from contagious diseases capable of being communicated to man, and that this system of inspection ought to be extended to all other establishments of the same class."

The full significance of this resolution will be perceived when it is remembered that in France tuberculosis is now included among the diseases legally recognized as communicable. The other resolution was to the effect that steps ought to be taken to spread among the public, especially in country districts, a knowledge of simple means of avoiding the danger incurred by the ingestion of the flesh or milk of tubercular animals, and of proper methods of disinfecting the excreta of phthisical patients, and objects contaminated by them.

A large number of papers on the nature and treatment of tuberculosis, and on the influence of heredity, were presented to the Congress, and the general scope of the discussions was sufficiently indicated by the letters of our Paris correspondent at the time. Without seeking to detract from the value of those clinical and pathological contributions, it yet appears that by far the most important work achieved by the Congress was the adoption of the resolutions which have been mentioned above. They deal, indeed, only with one element in the etiology of tubercular disease, but that not the least influential in its action, while practically it is the most important because its operation is most under control.—*British Medical Journal*.

MEDICAL EXAMINING BOARD OF VIRGINIA.—We are glad that THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, of September 8th, editorially reviews the record of this Board up to a recent date, and very warmly commends its labors to the consideration of the profession. It advocates the establishment of like Boards in other States, and shows by an analysis of the Reports of the Virginia Board what good has been done the profession. It naturally drifts upon the influence of such Boards in leading to a higher education by the Medical Colleges of this country, and severely reflects upon the conduct of those connected with a college who oppose the effort of the profession to bring about a higher standard for medical graduation. Many sensible, strong points are made in that editorial which we regret not having space to reproduce in our pages.

In the issue of this official organ of the American Medical Association for September 22d, we find a cordial approval of the editorial referred to by Dr. William Osler, of Philadelphia, an eminent Professor in one of the Philadelphia Medical Colleges. With reference to the Report of the Medical Examining Board of Virginia, he correctly says: "To the schools, such a report is as the handwriting on the wall, 'Mene, mene, tekel upharsin;' to the profession of every State, an encouragement to persevere in the good work of organizing Medical Boards."

Such sentiments expressed by those practically possessed of authoritative utterance go far to encourage the organization in other States of Medical Examining Boards similar to those in Virginia and North Carolina. They also help to encourage the profession in these two States to keep their Boards up to the high standard of excellence to which they have attained. There has been nothing in the conduct of the Virginia Board—nor, as to that matter,

in the North Carolina Board—to cause the profession to regret their selection of its members. With very rare exceptions, the few objectors to the Virginia Board are easily tracked to connection with or personal interest in some medical college.—*Virginia Medical Monthly*.

CLIMATE FOR CONSUMPTIVES.—PROFESSOR KNIGHT, of the Harvard Medical School, read a paper not long ago before the Boston Society for Medical Observation, on the choice of a climate for consumptive persons. Some of the ideas advanced may be of value to our readers. Patients who have cavities in their lungs, and those who have severe hectic symptoms, especially if they are poor, should not leave home, nor should those who have any acute affections of the lungs do so during the acute stage of the disease.

If, in the early stages of consumption, complete cure can be hoped for, a climate is to be chosen in which the patient can remain throughout the year. If, on the other hand, nothing more than temporary relief and some prolongation of life are to be expected, a mild winter climate is recommended.

While consumption presents a variety of phases and conditions, making it impossible to lay down fixed and invariable rules, it may be said that in general the first object aimed at by a change of climate is to enable the patient to live an active outdoor life, for the purpose of assisting nutrition of the lungs, and this is best attained in situations at an altitude of 4,000 to 8,000 feet above the sea level.

Dry and pure air, a good proportion of clear days, and a rarefied atmosphere which compels greater activity of the respiratory organs, make a mountainous country the best for this purpose. Those for whom high altitudes may be recommended are:

1. Patients who show no more alarming symptoms than a morning cough and expectoration. For them Colorado and New Mexico are suited.

2. Those who have some consolidations of the lungs, but no cavity, nor any serious constitutional disturbance. For persons who exhibit such disturbance—a high pulse and temperature—a lower altitude should be tried first; say the pure regions of Southern Georgia for the cold months, and then, if there is improvement, a more elevated region.

3. Cases in which there is early and frequent hæmorrhage, without much other evidence of disease. The mountains are peculiarly suited to persons of this class; and

4. Persons who are recovering from acute diseases of the lungs. But in these cases great care should be exercised, lest the steps taken to ward off permanent pulmonary disease have an evil effect upon other organs weakened by sickness.

Patients in whom tubercular disease has invaded the larynx should on no account be sent to high altitudes. They need mild and moist climates, like that of Southern California. Moreover, those who have a tendency to irritability of the bronchial tubes, and nervous persons, do not do well in high altitudes. A very high altitude should not, as a rule, be recommended for any patient over 50 years of age.

A DISGRACEFUL JAIL.—In the last quarterly Report of the Illinois State Board of Health DR. RAUCH says: On the 14th of July I made an inspection of the Tazewell county jail, at Pekin, concerning which I subsequently wrote to the sheriff in unqualified condemnation of the structure. That portion of it in which the male prisoners are confined consists chiefly of a room 27x28 feet, and 8½ feet high; this is divided by heavy iron bars into eight cells and, with its stone floor resting directly upon the ground, resembles a cage for wild beasts rather than anything designed for human occupancy. The only ventilation is by three apertures, 27x30 inches, fully one-third of the space obstructed by heavy iron-work. These aper-

tures are situated in the upper part of the wall, thus still further reducing their ventilating value, which is only nominally aided by two so-called air-shafts. Openings through the stone flagging in corners of the room communicate directly with shallow holes in the ground which constitute the only cloacæ. To empty these it is necessary to tear away the outside wall and then rebuild. The result may be imagined, but not described. Diarrhoeas and low continued fevers prevail among the prisoners confined in this damp, noisome stone dungeon. If this jail is the result of a studied effort to outrage every law of health, humanity and decency, the effort is a disgraceful success.

THE WHITECHAPEL MURDERS.—Dr. Bloch, a member of the Austrian Reichsrath, has called attention to certain facts which may throw a new light on the Whitechapel murders. In various German criminal codes of the seventeenth and eighteenth centuries, as also in statutes of a more recent date, punishments are prescribed for the mutilation of female corpses, with the object of making from the extracted organs the so-called "diebslichter" or "schlaflichter"—"thieves' candles" or "soporific candles." According to an old superstition, the light from such candles will throw those upon whom it falls into the deepest slumbers, and they may, consequently, be useful to thieves. At the trial of a notorious German robber in 1810, it was discovered that a regular manufactory had been established by gangs of thieves for the production of such candles. That this superstition has survived among German thieves to the present day was proved by a case tried at Biala, in Galicia, as recently as 1875. In this the body of a woman had been found mutilated in precisely the same way as were the Whitechapel victims.

THE CINCINNATI POLYCLINIC was organized on October 31. It was first opened last Spring as a voluntary clinic, but it grew so rapidly that the idea of the present enlarged undertaking was soon developed. It is the first post-graduate medical school in Cincinnati and the fifth in the United States, there being two in New York, one in Philadelphia, one in Chicago and one in St. Louis. The present enterprise starts off most auspiciously, and has secured a registration of students in advance. The students are restricted entirely to graduates in medicine. The Faculty was organized with Dr. Chas. A. L. Reed, Professor of Diseases of Women, as Dean, and the following additional Professors: General Medicine, Drs. Kemper and E. W. Mitchell; Surgery, Drs. Wallace Neff and Longstreet Taylor; Diseases of the Eye, Dr. Robert Sattler; Gynecology, Drs. R. B. Hale and Edwin Ricketts; Diseases of the Skin, Drs. A. Ravogli and M. Ricketts; Diseases of Children, Dr. H. W. Rover; Diseases of the Throat, Drs. A. B. Thrasher and Boylan. Dr. Rufus B. Hale was elected Treasurer and Dr. Taylor, Secretary.

A GOOD MOVE RELATING TO POULTRY SELLING.—The State Legislature of Massachusetts has enacted the following: 1. No poultry, except it be alive, shall be sold or exposed for sale until it has been properly dressed by the removal of the crop and entrails, when containing food. 2. Whoever knowingly sells or exposes for sale poultry contrary to provisions of section 1 of this act shall be punished by a fine of not less than five nor more than fifty dollars for each offense. The Boards of Health in the several cities and towns shall cause the provisions of this act to be enforced in their respective cities.

It would have been better, surely, to have omitted the words "when containing food," in the first section. The entrails always contain either food or the excrete refuse of it, containing numberless microbes ready to set up putrefactive or diseased processes.—*The Prophylactic*.

DR. JAMES CRANE, of Brooklyn, who died on November 1, was an old and honored physician of Brooklyn. Forty-three years of his life were passed in Brooklyn, so

that he belonged to the earlier professional circle so few of whose members survive. His practice was large. He was conspicuous in the medical societies and active in the hospitals, and he served as Brooklyn's representative in the Metropolitan Board of Health, and later as President of the Board of Health of this city. Through disability rather than because of growing age he had in recent years withdrawn from general view, but he will be remembered and regretted by many families who knew and esteemed him privately, by his professional associates and by citizens who recall his skillful and faithful performance of public duty.

SUED FOR MALPRACTICE FOR GIVING CHLOROFORM IN ECLAMPSIA.—Dr. J. J. Leppa, of New York, has been sued for malpractice. The plaintiff, an Italian woman, says that her brother, the patient, a boy of 15, went to work at his trade in a silk-twine and braid factory in the morning, and came home at noon complaining of a pain, and was shortly after seized with convulsions. She called Dr. Leppa, who gave him chloroform and ether. The boy had six successive convulsions. The anæsthetic brought him out of each, but at the end of the sixth he died. It is a well-known fact that chloroform is one of the best and most approved drugs in eclampsia; and this case seems to be a particularly unjust one.—*The Medical Record*.

SMALL-POX IN PHILADELPHIA.—A dispatch of November 3 says: Upon information furnished by a physician the local health authorities late yesterday sent to the Municipal Hospital a woman named Caroline Gabriel, who was suffering from small-pox. She reached New York last week on a Bremen steamer and came on to this city by railroad. Health Officer Patterson was to-day emphatic in his denunciation of the negligent conduct of the New York health authorities, as, from the condition of the woman when first seen by the physician who reported her case, she must have contracted the disease before leaving Bremen.

THE WESTERN BUREAU OF PRESS CLIPPINGS is an agency to furnish any one with newspaper and general periodical clippings upon any subject. It was organized by Mr. F. L. Hagadorn, an experienced journalist, whose address is Room 2, *Times* Building, Chicago. The subscriber has only to indicate what kinds of clippings he wishes, and they are sent regularly. It is a labor-saving institution for all classes of men, and as such deserves success.

THE SWEATING SYSTEM IN HOLLAND.—A Committee of the Dutch Chamber has recently reported that in that country the average factory day is from 13 to 14 hours, while the operatives work often 18, 24, and 36 hours at a time. The Committee also reports that infant mortality is increasing, technical improvements are neglected, and the inventiveness of workmen destroyed.

THE BACTERIA OF SEA-PHOSPHORESCENCE.—Professors Pflüger and Tilanus, it is stated, have discovered the bacteria that produce the phosphorescence of sea fish, and have cultivated them by Koch's method. In the dark the glass slide containing them is seen to be thickly strewn with luminous points.

PENALTY FOR HANDLING INFECTED CLOTHING.—The magistrates of Bootle, England, have recently fined two persons for removing infected clothing. In one case a man removed infected articles from the house in which his child had died of scarlet fever; in the other a poor woman pawned a quilt to buy food for her sick son.

A CREMATORY IN TROY.—The new crematory to be erected in Oakwood Cemetery, Troy, the gift of Mr. Wm. S. Earl, will probably cost \$150,000. It is to be of granite, 136 feet long and 70 feet wide, and will be a mortuary chapel and retort.

A RESEARCH LABORATORY for the Royal College of Physicians of Edinburgh has been recently completed. Cuts showing the arrangement of the rooms are given in the *British Medical Journal* of September 15.

SIR MORELL MACKENZIE'S BOOK, "The Fatal Illness of Frederick the Noble," has appeared in this country. It is published in America by Brentano, of New York, Washington and Chicago.

MEASLES have become epidemic at Wellsville, Ohio, and of such a malignant type that great alarm exists. In East Palestine alone over 100 school-children are down with the disease.

LIABILITY OF PARENTS FOR CHILDREN OVER AGE.—An English judge has recently decided that a parent who calls a physician to see a child over age (of age) is not liable for the doctor's bill.

CHILDREN IN FACTORIES.—The Assistant Inspector of Workshops and Buildings, of Findlay, Ohio, has found children eight years of age working in glass-making houses.

THE PUBLIC SCHOOLS of Athens, Ohio, are said to be closed on account of prevalence of diphtheria in that place.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from October 27, 1888, to November 2, 1888.

Col. Elish I. Baily, Surgeon, and Capt. John J. Cochran, Asst. Surgeon, detailed for duty on Army Retiring Board to meet at San Francisco, Cal., for the examination of such officers as may be ordered before it. Par. 3, S. O. 253, A. G. O., Washington, October 30, 1888.

Major John H. Bartholf, Surgeon U. S. Army (Ft. McIntosh, Texas), is granted leave of absence for one month, on surgeon's certificate of disability. Hdqrs. Dept. of Texas, San Antonio, Tex., October 10, 1888.

Capt. Daniel Weisel, Asst. Surgeon U. S. Army, died at Ft. Sill, Ind. Ter., October 30, 1888.

By direction of the Secretary of War, Capt. William H. Arthur, Asst. Surgeon, is relieved from duty at Ft. Bowie, Ariz., and will report in person to the commanding officer, Ft. Bayard, N. Mex., for duty at that post. Par. 21, S. O. 250, A. G. O., Washington, D. C., October 26, 1888.

James D. Glennan and Alfred E. Bradley, appointed Asst. Surgeons U. S. Army, with rank of First Lieuts., to rank from October 29, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 3, 1888.

Medical Director A. L. Gilon, ordered to Naval Hospital, Brooklyn, N. Y.

Medical Director John T. Taylor, detached from Naval Hospital, N. Y., and to Examining Board.

PROMOTIONS.

Medical Inspector Adrian Hudson, promoted to Medical Director.

Medical Inspector Michael Bradley, promoted to Medical Director.

Medical Inspector Newton L. Bates, promoted to Medical Director.

Surgeon T. Woolverton, promoted to Medical Inspector.

Surgeon C. H. White, promoted to Medical Inspector.

Surgeon G. W. Woods, promoted to Medical Inspector.

Surgeon F. L. DuBois, promoted to Medical Inspector.

Surgeon G. H. Cooke, promoted to Medical Inspector.

P. A. Surgeon Howard Wells, promoted to Surgeon.

P. A. Surgeon D. N. Bertolette, promoted to Surgeon.

P. A. Surgeon J. H. Gaines, promoted to Surgeon.

P. A. Surgeon Ezra Z. Dexo, promoted to Surgeon.

P. A. Surgeon F. B. Stephenson, promoted to Surgeon.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, NOVEMBER 17, 1888.

No. 20.

ORIGINAL ARTICLES.

OCULAR TROUBLES AS INFLUENCED BY NASAL DISEASE.

*Read in the Section on Ophthalmology, Otology and Laryngology, at
the Thirty-Ninth Annual Meeting of the American Medical
Association, May, 1888.*

BY LEWIS H. TAYLOR, M.D.,
OF WILKESBARRE, PENNA.

"There is no new thing under the sun" has been truly said many years ago, and its application to the various papers read from time to time before this and similar Associations is in the main correct. For, while looking from a different point of view, we may sometimes seem to present certain subjects in new lights, it is nevertheless difficult for us to bring forth matter pathological and therapeutical that has not at some point been touched upon, and possibly ably handled, by others of our professional brethren.

When I first began the consideration of this subject, being led thereto by the perusal of one article, and the treatment in private practice of a number of cases that presented points of interest bearing directly in this line, I was not aware that much had been written upon the relation of ocular and nasal diseases. Had I been familiar with the numerous interesting and valuable contributions to this department of medical literature that have since fallen under my notice I should have hesitated somewhat before being willing to present to you a paper upon a subject already treated so ably and thoroughly by others.

Yet, after all, the field is comparatively a new one, and I have thought it might not be out of place to present, or re-present, if so it be, a few points for discussion, and by the relation of a few cases from my own experience call your attention again to a too much neglected field of our practice.

I will not weary your patience nor occupy your time with a review of the anatomical structures, so familiar to you all, of the nose and the eye. The close connection between the two is apparent to even the superficial observer, and that the diseases of the one might readily be affected by those of the other needs to the thoughtful mind nothing more than the mere statement to carry with it conviction of its truth.

We have all of us at some time had certain puzzling cases, with annoying ocular symptoms that would not yield readily to our ordinary treatment. It may have been certain forms of phlyctenular conjunctivitis, keratitis, trachoma, irritable, dry or sticky lids, with harsh, rough, uncomfortable feeling, some forms of blepharitis, injected lids with enlarged marginal glands, photophobia with neuralgia, or other forms of disease with pronounced ocular symptoms, that we have treated as we do ordinary cases until our failure to influence their course has led us, if we have been wise in our day and generation, to seek the cause of the trouble outside of the eye itself, and we have found it quite often in the adjacent anatomical structures. Or it may be we are consulted by persons without apparent ocular lesions who complain simply of inability to use the eyes any length of time with comfort. A bright light is annoying, the printed page painful, and any continuous effort burdensome. A feeling of itching, fullness, lachrymation upon using the eyes, frequent headaches and other prominent symptoms are present; but when we make a careful examination we find vision normal, both near and distant, conjunctiva not especially swollen, perhaps a slight injection, ophthalmoscopic appearances good, and in fact we can detect nothing in the eyes to cause the troublesome symptoms. An examination of the nasal chamber reveals chronic rhinitis and very frequently hypertrophy of the membrane covering the lower and middle turbinated bones or a deviated septum causing an irregular enlarged passage on the one side, with an almost occluded one on the other. The connection between the eye and nose by means of the lachrymal duct is a direct one, and the lining membrane of the nose being thus continuous with that of the eye, we can readily understand how disease of the one might pass over, as we may say, to the other. Thus when a swollen mucous membrane with acrid discharge extends to the tear duct, partly occludes it, causes blepharitis of the lachrymal sac, and irritating conjunctivitis resulting therefrom, we can readily perceive the cause.

But there are other causes not so apparent. The tear duct is normal; it is patulous, there is no disease communicated from the nose to the eye directly, yet all the phenomena are here. Even

rhinitis is wanting. These are the reflex nasal phenomena so ably discussed by Dr. John N. Mackenzie and others. Sometimes the diagnosis by an inspection of the nose is apparent, but in others it is by no means so easy, and it may only be revealed by a careful and systematic treatment of the nasal difficulty. In my experience, however, the cases have been very few, of those coming under this category, in which a careful examination did not reveal the nasal lesion.

These cases are many of them subject to great variation in the intensity of the symptoms, but they are mainly characterized by lachrymation, injected, swollen conjunctiva, frequently passing into granular lids of the soft watery oedematous variety. There is generally irritation of the meibomian glands, with frequent perversion of the cilia, with yellowish secretion along the edges of the lids. Itching of the eyelids is frequently present. Photophobia not always. These are the patients that go from one physician to another improving slightly under local treatment, but readily relapsing into their old condition which seems aggravated by each additional cold they take. The oculist who studies and treats nothing but the eye will generally fail to give relief because the source of the trouble has not been detected by him and too often not even suspected.

The successful issue will depend mainly upon the proper management of the nasal affection, supplemented of course by a due consideration of what may be needed in the way of soothing applications to the eyes themselves; neglecting, by no means, general hygienic measures and systematic treatment when indicated. I desire here to relate the history of a few cases out of many that have proved interesting to me in the special study of these disorders.

Case 1.—Mrs. W. S., consulted me Dec. 17, for a chronic affection of the eyes which she and her husband declared had lasted nearly thirty years. It was also stated that she had been treated at various times by skillful physicians, also by quacks and old women, but without any permanent good resulting from the same. Vision in OD. $\frac{10}{cc}$. OS. $\frac{3}{cc}$. This low vision being largely due to the presence of old corneal opacities. Her eyes are constantly weeping. This lachrymation is increased by any attempt at examination. Cornea is affected; it is rough and the epithelium in some places is apparently destroyed. Old opacities in both. Finely granular lids, cilia considerably affected and blepharitis existing in both eyes, with here and there quite large yellowish spots around the roots of the cilia. Altogether she seemed a most unpromising case for treatment. I gave her at first, atropia and weak zinc sulphate solution, prescribing also an alterative, and recommending the use of hot water to the eyes daily.

The treatment being continued in this direction

for a few days only, but with no apparent effect, I made a careful examination of the nose, which revealed the right side almost occluded by swollen membrane over the turbinated bones. There was a discharge of offensive yellowish material and the same had a constant tendency to drip in the throat. She had great difficulty also in breathing through this side of the nose. Vigorous treatment was at once instituted, and from this time on was directed mainly to the nasal condition. I used a spray of Dobell's solution for the purpose of cleansing, and applied the galvano-cautery freely to the enlarged turbinated bone. The left nostril was affected also but in less degree than the right. The cautery was repeated several times, the loop being more frequently used than the knife.

She improved rapidly. In one month the left eye was quite well and the right greatly improved. Early in April I removed with the cautery loop a polypus which had appeared in the right side during a cessation of treatment. The granular lids also were treated, chiefly by copper sulphate, alternating with tannin and glycerine. The improvement, as stated, was rapid and although the old opacities remain, and she is not entirely well, yet a very satisfactory condition is obtained from what seemed a very unpromising case. As a recent test V. in OD. $\frac{20}{cc}$. OS. $\frac{20}{XL}$.

Case 2.—Miss B., æt. 20, came to me in July, 1886, for treatment of granular lids and partial pannus, with watery rough cornea, especially in OD. I treated her for several months with silver nitrate, glycerole of tannin and various other procedures, be it said to my discredit, without treatment of the nose. She improved somewhat, so that I fitted her with glasses OD. + 1 cy. ax. 105°. OS. + 1.25 cy. ax. 75°. These gave some relief and she left town for a time.

The trouble was very obstinate and she returned in much the same condition as before. This was one of the cases in which inspection of the nares did not reveal rhinitis nor any considerable amount of fetid catarrh. But there was plainly shown an enlargement of the lower turbinated bones covered by almost normal membrane which pressed against the septum of the left side. Pressure readily lessened the swelling but caused increased lachrymation, as did any treatment of the nose. In the Spring of 1887 I began treatment of the nasal difficulty, in connection with the eye treatment, cauterizing freely the swollen turbinated membrane. The improvement was marked and rapid; OD. became entirely well in a short time, and OS. much better than it formerly had been. She left town for a time and lately has returned with a relapse in OS. which was not entirely well at the time of leaving. This is improving nicely under treatment.

Case 3.—Mr. L., æt. 25, V. OD. $\frac{15}{XX}$. OS. $\frac{15}{XV}$. He

has granular lids, especially in OD., which has pannus over about one-third of the cornea. The lids are velvety, granular and thickened. The meibomian glands are affected. He cannot possibly keep the right eye open. A gush of scalding tears follows every effort at examination. He has had this trouble for many years, and was treated with some relief by a physician seven or eight years ago.

Inspection shows hypertrophy of the nasal membrane on both sides, the right being almost occluded. Thinks he has had catarrh many years. Says his throat feels as if he had something in it all the time. He has granular pharyngitis (Oph.). OD. dimly seen, refraction about normal, but the fundus is greatly blurred. The upper part of cornea is blurred with pannus encroaching on the pupil. OS. nearly normal.

I advised daily treatment with spray to nose and throat, and glycerole of tannin to the lids with a collyrium of zinc sulphate to be used at home. After one week's treatment I advised atropia and bichloride solution at home, and I cauterized freely the right side of the nose.

Pupils dilated readily and I discontinued atropia. In another week he was much better. The cautery was applied two or three times and at the end of the month he was able to discontinue the bandage and resume his work. This patient is still under treatment but is improving rapidly.

Case 4.—Mr. C. L., æt. 22, OD. v. $\frac{20}{XX}$ OS. $\frac{20}{XX}$. Jr. I 5"—16" in each. No As. He comes in reference to his eyes. The lids are very finely granular, scarcely perceptible. He cannot use his eyes any length of time without pain and blurring. They water readily, and at other times have a hot, dry feeling. Oph. about normal in each. There was nothing in the condition of the eyes to suggest so much subjective trouble, but an examination of the nose revealed at once the source of the difficulty. He has nasal catarrh, which has become quite offensive. Membranes are swollen and passages partly occluded. I advised a weak solution of silver nitrate to the lids and spray daily to the nose. After a few days I applied the cautery to the left nostril. He has been under treatment but a short time but the improvement is already manifest.

From a perusal of these cases it is readily seen that in treatment much dependence is placed upon the careful but thorough use of the galvano-cautery, the application of which is rendered painless by the use of cocaine. Now, by thorough use, I do not necessarily mean the searing of the whole surface of both septum and sides of the nose, but the repeated application with small cautery knife or loop to a limited surface until at least a free breathing space is obtained and the ocular trouble removed. I have generally used the flat cautery knife, though I frequently prefer the loop, allow-

ing the wires to sink into the tissues, hoping by the healing of the eschar to obtain contraction of the tissues giving a free passage without destroying so large a surface of membrane.

I do not mean to say that every case of nasal disease will give rise to ocular troubles, but the chronic swelling of the membrane and the cavernous bodies underneath by which the turbinated bodies are pressed against the septum is very apt to give rise to reflex symptoms elsewhere. Dr. J. M. Mackenzie has shown that there are sensitive areas in the nose, especially over the lower turbinated bone, the irritation of which produces reflex symptoms in the eye, larynx, etc. We have all noticed how readily lachrymation is produced in certain individuals by the slightest touch of the nasal membrane, and it is readily seen that the constant pressure of a deviated septum against such must result in annoying and persistent symptoms.

The indication plainly is to get rid of this enlarged sensitive area. In addition to the cautery I have found in many cases good results from the use of nitric acid applied upon a cotton carrier as recommended by Dr. Lefferts, of New York. I have under my care at present a lad whose mother in bringing him to me for his first examination stated that he had used bottle after bottle of cocaine and it had done him no good except for the moment. This tallies with my experience. Cocaine is useless in such cases except for temporary relief.

A word as to prognosis. While I have in many cases seen rapid and satisfactory progress toward recovery as the result of the above mentioned treatment, I cannot report, as do some of our brethren, the healing of these chronic cases in a few days, and with but one or two applications. I believe the majority of them will require protracted treatment lasting for weeks, and even months, to effect permanent cures, with many relapses and discouragements. The most important point is the early recognition of such cases, and then their early and systematic treatment directed especially to the nose and not to the eyes.

The careful and painstaking physician will always examine thoroughly the nose in connection with ocular troubles, and those of us who are none too careful should at least receive sturdy hints to pursue our investigations further, when we see the ocular difficulty fail of improvement under ordinary local treatment.

SIXTEEN INCH CHEST EXPANSION.—The average chest expansion, as we know, is but little more than three inches; six inches expansion is very rare. The New York papers tell of a man in Brooklyn, an Irishman, 5 feet 10 inches high, and 45 years of age, who can expand his chest sixteen inches.

SURGICAL TREATMENT OF EMPYEMA IN CHILDREN.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May 10, 1888.

BY D. A. K. STEELE, M.D.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY AND CLINICAL SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO, ILL.

In presenting for your consideration the subject of the surgical treatment of empyema in children, I am sure that no apology will be necessary, when we consider that more than half the cases of empyema recorded occur during the first decade of life; and that more errors of diagnosis are made than in probably any other thoracic affection.

Definition.—By empyema we mean a collection of pus in the pleural cavity, the abscess bounded upon one side with the soft, receding, compressible lung, and upon the other side with the firm unyielding bony chest wall. And in the consideration of its surgical treatment, we must remember the ever-present surgical maxim, that "wherever we have a pus collection, it must be evacuated in the speediest, safest, and most thorough manner."

Causes.—It is not my purpose in this paper to enter into a consideration of the various causes giving rise to empyema, but I may state that in the majority of cases, it is my belief that a purulent pleuritis is due to auto-infection of a more or less limited area of the inflamed or damaged pleura through the medium of the general circulation; the pus microbe thereby gaining entrance and commencing its destructive action upon tissues that otherwise would only be the seat of a simple pleuritis. Other methods of infection are the use of unclean aspirating needles; rupture of a bronchus; extension of a septic pneumonia; secondary infection from the primary foci in some other point of the body; tubercular infection, etc.

Symptoms.—The symptoms, where we rely upon clinical evidence alone, are not sufficiently pathognomonic to be diagnostic. It is easy to determine by physical examination that we have a pleural sac distended with fluid, but its exact nature can only be determined by the introduction of a hypodermic needle (better of large size). If, following the usual symptoms of an acute pleuritis we have chills, fever, hectic, diarrhoea, and sweating, we are reasonably certain of our diagnosis without the aspirating needle. If these symptoms are accompanied by localized cedema or bulging of the intercostal space, usually the 5th in the mammary line, there is almost absolute certainty of pus in the pleura. The diagnosis may be made as early as the fourth day of the disease, although usually it is delayed until the second week or later. All cases of pneumonia that are tardy in undergoing resolution should awaken a suspicion of empyema. I have seen a

number of striking cases of error in diagnosis in cases of this character. Secondary infection of the pericardium is a fatal complication in a number of cases running a rapid course. A striking example of this mode of termination was recently detailed to me by Prof. C. W. Earle.

Empyema, if left to itself, may terminate in recovery in one of three ways according to L. Emmet Holt: (1) by spontaneous absorption of the purulent effusion; (2) by evacuation through the bronchus; (3) by opening externally through the intercostal muscles; but when left to nature the mortality is appalling.

Rilliet and Barthez mention thirty-three cases with four recoveries, twenty-one deaths, and eight not accounted for.

Surgical Treatment.—No absolute rule can be laid down for the management of all cases. We have our choice of operations from the following: For example, we may resort *first*, to aspiration; *second*, aspiration and washing out of the cavity with an antiseptic solution; *third*, thoracentesis with trocar and canula; *fourth*, thoracentesis with sub-aqueous drainage; *fifth*, simple incision; *sixth*, simple incision and drainage; *seventh*, simple incision with through and through drainage, with, or without, antiseptic precautions; *eighth*, subperiosteal resection of rib and drainage; *ninth*, thoracoplasty (Eslander's operation); *tenth*, pleurotomy.

Which of these various methods will give the best results? As a matter of fact, as practical surgeons, we may confine ourselves to the relative merits of but two of these methods—aspiration, and free incision with drainage.

There is no question but that in a certain minority of cases in children, simple aspiration once or twice repeated, will effect a permanent and satisfactory cure.

I have the records of four such cases:

Case 1.—Charlie F., æt. 18 months; diagnosis, empyema, which was confirmed by Prof. H. A. Johnson; cured by aspiration; five ounces of odorless pus; died three years subsequently of malignant diphtheria. This patient was also seen by Prof. Waxham, and Dr. D. H. Sullivan.

Case 2.—Mamie S., æt. 30 months, treated for six weeks for chronic pneumonia by a distinguished physician; cured by one aspiration; twelve ounces of greenish pus withdrawn, very flaky; diagnosis confirmed by Drs. E. E. Babcock and T. K. Jacobs.

Case 3.—Baby, æt. 14 months; two aspirations; cured.

Case 4.—Infant (Home of the Friendless); empyema; two aspirations; cured.

Aspiration has the advantage of being simple, safe, and occasionally curative; but if we find the fluid re-accumulates, or septic symptoms are developed, then a free incision with drainage is imperatively demanded.

Aspiration has the disadvantages of leaving a small amount of pus for reabsorption, or which may become an inspissated residuum according to Abbe, that will result in a secondary abscess in after-life. Surgically considered, it is not as perfect an operation, or as scientific a procedure, as evacuation by a free incision and the introduction of a large sized drainage-tube.

Of 121 cases treated by aspiration alone, 23, or 19 per cent. were cured, six died, and the rest came to some other method of treatment, usually incision.

Incision.—Free incision, therefore, remains as the method possessing the decided advantages of complete evacuation of the purulent fluid, flakes of lymph, etc., and it moreover permits us to explore the cavity with the finger or sound and break down any septa or bands of adhesion. It permits of subsequent irrigation, if the septic nature of the fluid demands a washing out, and also gives us complete drainage.

The technique of the operation is comparatively simple; the diagnosis having been established beyond a doubt by preliminary definitive hypodermic aspiration. The field of operation is prepared in the usual manner for all aseptic operations. The point of selection for free incision and drainage is the posterior border of the axillary line in the 6th or 7th interspace, as in the recumbent position expansion of the lung tends to expulsion of the fluid at this point, although cases left to nature ordinarily point in the 5th inter-space, two inches to the outer side of the nipple. General anæsthesia is usually not required, although a few whiffs of chloroform in nervous children are of advantage sometimes. But local anæsthesia by means of the ether spray or hypodermic injections of from ten to fifteen drops of a 4 per cent. solution of muriate of cocaine answer every purpose in abrogating pain. The fold of skin at the site indicated is transfixed on a line with the upper border of the rib and incised for one and a half inches; then the intercostal muscles and pleura are divided, and as pus flows out in a full stream a large-sized rubber drainage tube is inserted and secured by safety pin, or by a button of rubber flange reflected so as to prevent its intrusion into the pleural cavity. The tube should not be more than three inches long. Irrigation should not be resorted to except in septic empyema where the fluid is fetid and caseous from bacterial decomposition.

I recently lost a patient during an irrigation with a solution of warm water slightly borated. The cause of death was probably due to a thrombus or obscure pleural reflexes causing shock.

As soon as the tube is introduced it should be covered with sublimated gauze so as to prevent entrance of septic germs, and the pus should be allowed to flow out upon absorbent cotton or antiseptic gauze, and the dressings changed daily. Strict antiseptic precautions are always necessary,

and our greatly improved results and lessened mortality are due to the antiseptic treatment now employed.

Contrast the different results: Depuytren operated in fifty cases with only four recoveries, while L. Emmett Holt reports sixty-three cases operated upon under full antiseptic precautions, with only two deaths. Of this number twenty-six successive cases were operated on by Goodhart and Taylor in the Eveline Hospital, London, with only one death, and *that* from a complicating pericarditis and peritonitis. The average duration of the discharge was about six weeks. In children we are usually able to discard the use of tubes in three weeks. When close apposition of the ribs causes flattening of the tube during pressure from coughing or induces neuralgia due to pressure upon the intercostal nerve, subperiosteal resection of one and one-half inches of the single rib will afford ready relief and better drainage; although my experience has been that it is rarely required. In old empyemas in children, or when we have a chronic abscess discharging through a sinus and shortening the life of the patient by lardaceous degeneration of kidneys, liver or spleen, or from general exhaustion, Eslander's operation of thoracoplasty should always be performed, although its field of usefulness is limited; but, if necessary, a sufficient number of ribs and a section of each should be made to permit the complete retraction of the divided ends of the ribs to the bottom of the cavity, thus closing it, otherwise a fistulous tract remains requiring a subsequent operation.

In regard to Ewart's method of perflation, reported last year, I have no personal experience.

In conclusion, therefore, I may summarize my observations as follows:

1. The surgical treatment of empyema in children is eminently satisfactory, and yields better results than in adults.

2. Multiple hypodermic aspirations are necessary to perfect a diagnosis, and should always be resorted to in cases of thoracic disease about which there is any element of doubt, especially in cases of pneumonia that exceed the usual period and become "old monia."

3. Aspiration cures a small minority of cases and should always precede a more radical operation, especially in localized empyemas.

4. Free incision and drainage, with local anæsthesia, under strict antiseptic precautions, gives the most satisfactory results in the majority of cases.

5. Subperiosteal resection of the rib is sometimes necessary to afford perfect drainage.

6. Thoracoplasty is rarely required in children.

7. Other methods of treatment should be resorted to for special cases or circumstances.

8. Early incision, perfect drainage, and complete antiseptics should be the rule.

GYNECOLOGIST VS. GENERAL PRACTITIONER.

Read in the Section on Diseases of Women, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY J. W. BROWN, M.D.,

OF MOTTVILLE, N. Y.

The able paper of Dr. Van de Warker upon proper methods of *instruction* leaves little to be said; but how shall we *practice* who are numbered with the rank and file of the profession, and are not so happily situated that the elegancies of specialism are obtainable? The general practitioner in the country has no sinecure. His attainments are well known, although but little from his pen appears in the journals, and he is not *invited* to elaborate pages of *theory* in the prevailing subscription treatise. His attendance at stated meetings of our various medical societies is uncertain; yet his opinions are none the less worthy of consideration, no matter how remote may be his location. With only a limited command of current literature and less time for its perusal, and with a meagre library, we find him working out these problems after methods of his own that demand recognition, even when unaccompanied by the erudition and culture of our cities.

Results are of more value to our patients, even if lacking the trade-mark of Vienna or Berlin; but how shall we obtain them? We all know to our sorrow the *magic* of the word "gynecologist" to our patient that pays. Imperceptibly she drifts from us. But how about the poor unfortunates who cannot afford this luxury, and whom we have with us always? To the wealthy, or those of modest means, the "private" hospital is always open, with skilled attendants, proper diet, regulated exercise, freedom from care, plenty of sleep; and, after weeks or months of special treatment, they return to us greatly benefited—sometimes (?) well, and at a cost that would wonderfully help the family physician; but *specialism is expensive*, and we therefore see the *cream* served upon the table of our brethren of gynecic renown, while we take *skim-milk* "in ours," and patiently listen to "how little country doctors know about female troubles," and are asked to wait when our modest bills are presented, as it cost *so* much for Dr. —. In the meantime what becomes of our poor patient (her husband mayhap a laborer), with a large family? She is anæmic, with all the concomitants of typical nervous exhaustion. Does she ever get well? Is her progress any the less rapid than that of her more fortunate sister?

We all know what specialism accomplishes, and it is far from my desire to disparage it. We would indeed be in "*outer darkness*" were it not for the distinguished labors of American gynecologists. But what means shall we adopt when we cannot follow in their footsteps, not having the adjuncts at our command? Who is there in active country practice that has not some of these typical cases

who can barely afford the necessities of life. We have no hospitals at our disposal, and attendants are limited to some gossiping dame whose constant chatter drives them to the verge of distraction; the food is often improperly cooked and served in a manner that may be termed brutal; the little niceties of the fastidious nervous invalid condemned as fussiness, and a spirit of fretfulness developed by constant "nagging." It is useless to extend the tale—we all know it only too well; yet are our results any the less satisfactory? Is there not a tendency among our *confidères* of gynecological renown to ignore what general medicine taught them years ago, and attend only to the *special* features as seen by them, and by their influence through their patients affect the majority of women by calling attention to genital disturbances and thereby magnifying them? To us that cannot afford these luxuries and have not the time at our disposal for the dilettanteism of the profession, what shall we do? With the best means within our reach, *theoretically* our work is useless. *Is it so practically?*

What will best accomplish the cure of these poor nervous invalids, with no brain lesion, yet standing upon the border of "melancholia"—starving mentally, nervously and physically? Why does insanity in country districts make such rapid progress? We who spend our lives in farming communities know too well the monotony that is the lot of our poorer patients and, when accompanied with genital disturbances, makes their lives a curse and causes us more anxiety than profit. Shall we desert them because theoretical treatment is not attainable, and financially they cannot be removed from these influences and obtain the rest of body and mind so essential to recovery? Take our specialist from his idols and where is he? We must solve this problem ourselves, and I hope the discussion may develop much that we can apply to their alleviation. In their management, the merely negative man will not succeed. Be certain of your diagnosis, "then go ahead." Obtain their confidence or else abandon the case. Respect the hyper-sensitiveness, that is always present. Do not be arbitrary, as much depends upon moral suasion. Treat all genital lesions after recognized methods, adapting to the circumstances and surroundings. We have plenty of fresh air and, with pure milk and good diet, general debility can be slowly restored. Use tonics judiciously, but the mental starvation, associated with ovarian tenderness, engorgement, neuralgia and its legion of disturbances, must ever prove the obstacle that requires our most urgent efforts to surmount.

Neurasthenia is no myth, even among the poor or in remote country places, and the difficulties of cure will ever tax our utmost resources. Regulate menstruation and the abuse of sexual gratification. Divert attention from genitals, making light of their influences. Educate the will. Teach

self-reliance. Turn their thoughts towards recovery, not hypochondriasis. Make them understand that you will assist, *not* sympathize with every imaginary ache and pain. Trust them and encourage them in their effort towards recovery; even "if they fall by the wayside," try it again. Do not encourage morbidness, for we all know the craving for sympathy that invariably persists even when partially convalescent. Avoid drugs, especially anodynes, hypnotics and opiates. Treat upon general principles, no matter if it is old-fashioned. It is no sign of mental decrepitude if our patient retains her ovaries intact or trachelorhaphy has never been performed. Again repeating that, while admiring the skill and general worth of our brethren of special faith, they must always remember that general medicine is the *sine qua non* of success.

OBSERVATIONS ON YELLOW FEVER, WITH SPECIAL REFERENCE TO DIAGNOSIS, PROGNOSIS AND TREATMENT.

Read before the State Medical Association of Florida, 1888.

BY JOHN P. WALL, M.D.,
OF TAMPA, FLA.

The following remarks on yellow fever are based on clinical observations during the epidemic of that disease last fall in Tampa.

The etiology of this fever is but little, if any better understood than its pathology; and in these two points are to be found the individual characteristics, so to speak, of the disease. The idea of yellow fever being only a more malignant grade of malarial fever can only be entertained by very superficial observers, or those who have never passed through an epidemic of this fever. Notwithstanding this broad assertion it is not by any means easy, nor in fact always possible, to determine whether any single case is yellow fever or not; and this is especially the case at the inception of an epidemic. To arrive at a conclusion on this point quite a number of circumstances in connection with the case, apart from the symptoms, have to be taken into consideration; and then, reasoning by a process of exclusion, we may be able to approximate, at least, the probable truth. The recent history of the patient as to being exposed to infection in another place, on board ship or otherwise, and whether or not the patient has had a previous attack of this specific fever, are circumstances of the first importance to be taken into consideration. Though the patient may be from an infected place or have been otherwise exposed to the infection, yet if it can be positively established that he has had yellow fever, the probability of his having a second attack is so unlikely and remote as to warrant the exclusion of the yellow fever hypothesis in arriving at a diagnosis.

But where the patient has recently been exposed to infection and possesses no immunity acquired by a previous attack from this specific fever—in other words, is not acclimated—then, in such a case, there is a probability of its being yellow fever, and advantage should be taken of the doubt and the case managed as a case of yellow fever without waiting for a positive diagnosis. The management of such a case consists in the complete and thorough isolation of patient and attendants and, on the termination of the case, the prompt institution of measures for efficient disinfection of everything, even to premises, that might have been contaminated.

In its symptomatology yellow fever presents no well-marked indications of its true character in the beginning; nor, for that matter, at any time in mild cases, during its progress. Its attack is generally ushered in by a chill or chilly sensation, as in most other fevers and the pyrexia. With the rise of fever there is generally intense frontal headache, with pain in the small of the back and extremities, especially the legs. A feeling of tiredness in the legs, with a sense of general prostration, is usually experienced. Nausea from the beginning is not an uncommon symptom, though not always present. Incessant nausea with much retching or vomiting, during the first exacerbation of fever, indicates the case to be of a severe type. The tongue is generally coated with a white or whitish fur, is sometimes enlarged, and almost invariably presents red edges on the sides. The temperature for the first three days may range in different cases from 102° to 106° F., with a slight morning remission in the majority of cases. The pulse for the first three days may range in different cases from 90 to 110 per minute, though not so frequently above as below 100 beats per minute.

The skin is generally burning hot, rarely dry, and not unfrequently bathed in profuse perspiration. In many cases, after the fever sets in, the extremities remain cool, while the body heat is intense and pungent. And it is in this class of cases where mustard pediluvia or mustard sitz baths have been found so useful and beneficial in restoring the equilibrium of the circulation, as to render the mustard bath an almost universal remedy in the beginning of treatment. In severe cases albumin will be found in the urine on the *third* day, as a rule. Its presence is always a grave symptom, but as it is rarely—never in my observations—to be detected before the third day, it is impossible to determine up to that time whether the case is to be of a mild or grave type. In all cases where albumin is not present in the urine on the third day or at the expiration of seventy-two hours from the inception of the fever, the case will, as a rule, prove to be of a mild type, and the patient and friends can be assured of a speedy recovery if great prudence in eating and drinking is exercised for two or three days more.

And just here it is well to distinctly emphasize the fact that it is the acute parenchymatous nephritis, as indicated by the presence of albumin in the urine on the third day, which is the most marked characteristic of the graver type of this fever, and without which the icteric hue of the conjunctivæ and skin is rarely, if ever, developed. But it must be borne in mind that by no means do all cases of this fever, as it presents itself in this country, have albumin in the urine. And it is the presence of albumin in the urine on the third day, subsequently followed by the icteric hue of the conjunctivæ and skin, by which this fever can be positively diagnosed. These two symptoms—albumin in the urine and the icteric hue—at the proper time and in proper sequence, render the diagnosis of yellow fever as positive, from a scientific point of view, as it is possible to diagnose any other disease by physical symptoms.

The later writers and authors speak of albumin appearing in the urine in yellow fever, but fail to indicate at what time or stage of the disease the albumin is to be found; and they also fail to say that it is not present in all cases—two facts of the first importance. In the *London Lancet* of March 17, 1888, Dr. Robert Lawson, Inspector-General of the British Army, who had served in Jamaica, says: "On the evening of the third day, or morning of the fourth, the urine generally presents traces of albumin," thus confirming my observations as to the time when the presence of albumin in the urine may be expected. He fails to state, however, that albumin is not present in all cases of the fever, a fact of the highest importance in eliminating much of the confusion in regard to the diagnosis. In mild cases, where no albumin is found in the urine on the third day, the fever will terminate on the expiration of seventy-two hours, sometimes earlier, not to return, and the patient will progress to rapid convalescence without further trouble.

Yellow fever is generally described by authors as a fever of one paroxysm of seventy-two hours' duration, followed by a stage of apyretic calm of variable length, from one to twelve hours, and this is succeeded by the recurrence of fever of more or less intensity, accompanied with nausea and vomiting of white glairy mucus at first, then flecked with dark specks and shreds, which have been compared to bees' or butterflies' wings, finally terminating in the coffee-grounds-like black vomit. Now, as a rule, all of this is true of typically bad cases, but this secondary fever and nausea are very rarely to be met with in mild cases devoid of albumin in the urine on the third day. And in all cases in which there is no nephritic complication, as indicated by the absence of albumin in the urine, yellow fever ends on the third day, or perhaps earlier, convalescence practically sets in and recovery is soon complete.

Thus it will be seen that practically there are

two types or grades of this fever to be met with in an epidemic—one whose main feature is an acute parenchymatous nephritic complication developed by the third day; and the other which, having no such complication, ends with the first paroxysm of the fever and almost invariably terminates in speedy recovery, the patient being up and about as early as the fifth or sixth day. Not so, however, where albumin is detected in the urine on the third day; for while, in this class of cases, the high fever of the first three days may subside, and the pulse rate return to the normal, or even fall much lower, and the temperature be anywhere from 97° to 104° F., the patient still continues in a most critical condition, and not unfrequently so remains for an indefinite number of days. In some instances the temperature and pulse are normal, and so remain after the subsidence of the first paroxysm of the fever; but there are plenty of indications, and especially the albumin in the urine, to show the serious condition of the patient. It is doubtless this class of cases to which relapses are attributed by a certain class of physicians who are always trying to explain away why they failed to cure all their cases of yellow fever.

The amount of albumin in the urine varies in different cases, ranging from 5 to 75 per cent. of volume of the total amount; and, as a rule, the greater the amount of albumin, the more serious and less hopeful may be considered the prognosis. In these nephritic cases the eyes begin to show the icteric hue on the fifth day, and on the sixth or seventh day the skin begins to turn yellow. In rapidly fatal cases, terminating as early as the fourth or fifth day, the yellow hue appears earlier and is always well-marked after death. The yellow color which is characteristic of this fever in its worse and most fatal type, and has given the fever its name, is very rarely indeed, if ever, present in cases unaccompanied by the nephritic complication. This is repeated because it is a most important fact to remember.

Hæmorrhages from mouth and nose are not infrequent in the severe grade of cases having the nephritic complication. The urine may be tinged with blood, imparting to the coagulated albumin a dark color, but hæmorrhage from the urinary organs is seldom profuse; and as these hæmorrhages never occur in the paroxysm of the fever of the first three days, and only in cases with the nephritic complication, there should never be any trouble in differentiating yellow fever from hæmorrhagic malarial fever. The eyes become bloodshot in no inconsiderable number of cases. Epistaxis and bleeding from the gums are the more common forms of hæmorrhage met with in this fever, and the nose-bleed is often alarming. Among females passed puberty, more or less uterine hæmorrhage is almost certain to occur during the course of the fever, making its appearance

from the third to the fifth day. Even in mild cases this uterine hæmorrhage is rarely absent—and by mild cases are understood those without the nephritic complication.

The icteric hue of conjunctivæ and skin has very much the appearance of ordinary jaundice, though it is hardly likely that it is produced by the same cause—retention of bile in the blood—for the reason that bile is not very frequently found in the urine, as is universally the case in ordinary jaundice. One of the tests for bile in the urine is to add albumin and precipitate it with heat and an acid, when the coagulated albumin will assume a greenish color, imparted by the presence of biliverdin. In cases with the nephritic complication the albumin is already present in the urine, but it is only occasionally that the precipitated albumin assumes the greenish color of the biliverdin. From the time the yellowness of the skin becomes fully developed until it begins to fade, the capillary circulation is extremely sluggish; so much so, in fact, that firm pressure on the chest with the open and separated fingers leaves their marks on the surface for a number of seconds if not a full minute. Judging from the tendency to hæmorrhage and the capillary stasis which are such prominent features in severe cases of this fever, and taking into consideration the absence of bile in the urine in the large majority of cases, the conclusion is highly probable, if not positive, that this yellowness must be mainly dependent on pigmentation of the eyes and skin by the coloring matter of the blood, instead of being occasioned by the retention of bile in the blood—as in ordinary jaundice—as is generally supposed and believed.

Suppression of urine, or a very scant secretion more or less tinged with blood, only occurs in the third stage of the fever; rarely, if ever, during the paroxysm of the first three days. And it is only in this graver type of cases, with the nephritic complication, that suppression of urine takes place, to be followed by spasmodic twitchings, stupor, convulsions and death. These muscular twitchings are especially noticeable about the face. These nervous phenomena are supposed to be the effects of uræmic poisoning as a result of non-excretion of urea by the kidneys and its retention in the blood. But be that as it may, their occurrence is almost a certain prelude to a fatal termination, and in a prognostic sense is as bad, if not worse, than the black vomit. Hiccough is never met with in the first fever, *i. e.*, before the fourth or fifth day, and is a symptom of the most unfavorable import.

The injected and watery eyes, swollen face and anxious countenance so generally depicted by writers on this fever, may be noticed in a large number of cases, probably the majority. The detection of albumin in the urine on the third day of the fever and the subsequent icteric hue of eyes

and skin, establish the diagnosis of the fever beyond all doubt. But as before pointed out these two symptoms are absent in mild cases—those unattended with the nephritic complication—and hence the frequent disputes and contentions as to diagnosis in the beginning of an epidemic. The duration of the paroxysm of the fever for only seventy-two hours, or even perhaps a shorter time, and its abrupt termination without the use of quinine, should excite, however, grave suspicion of its character; and this suspicion will be greatly strengthened if the chill come on in the night, and especially in the latter half of the night. Dengue is the only other fever of our climate which may be ushered in by a chill at night, but its symptoms are too well marked—besides being a proverbially non-fatal disease—to admit of its being mistaken for yellow fever, or, *vice versa*, yellow fever being mistaken for dengue, by any one but the merest tyro in the profession—especially after a few days study and observation.

This brevity of the first paroxysm of yellow fever in mild cases, the subsidence of the fever without the use of quinine, the severe frontal headache, with pain in the back and extremities, and the absence of a second paroxysm of fever, taken with the appearance of the eruption on the extremities associated with dengue, will rarely fail to indicate to the experienced physician the true nature of the case. Many yellow fever patients emit a peculiar odor which the experienced physician has no difficulty in recognizing, though he may not be able to describe it by comparing it to any similar smell.

The matter of early diagnosis is a most important one in our Southern cities and towns as it is generally conceded, and my own experience tends to confirm this view, that if the first case (or cases) is recognized and proper measures of isolation and disinfection are instituted an epidemic may be prevented, especially in places whose atmosphere is not vitiated with miasmatic exhalations from accumulated filth. Hence the importance of ever being on the alert and carefully investigating any and every case of fever that comes under observation during the season when the fever usually prevails—the summer and fall of the year.

Daily observations should be made for the detection of albumin in the urine from the first to the fourth day, and if its presence is denoted on the third day the diagnosis is probable, and if on the sixth or seventh day there appears the icteric hue of conjunctiva and skin the diagnosis is positive. If the case is mild, however, but with the severe frontal headache and other symptoms already detailed, and abruptly terminates on the expiration of the third day, though no albumin may have been found in the urine, the diagnosis of yellow fever is only problematic, but the benefit of the doubt should be given to the community and all necessary precautions taken to prevent the increase and spread

of the infection. Of course the previous history of the patient, as to the probability of his having been exposed to the infection, and as to his ever before having had yellow fever, should be duly investigated.

As to treatment little need be said, as, unfortunately, so far no specific treatment has been found. The mild cases of the fever—those destitute of the nephritic complication—will, as a rule, get well spontaneously, with or without treatment, and it is probably because of the failure to recognize the two types of this fever pointed out in this paper that so many different remedies have been vaunted and then laid aside, and so much been said of different epidemics differing in their phases, and of remedies effective in some epidemics and futile or useless in others. The main indications are to restore the equilibrium of the circulation by mustard pediluvia or baths, evacuate the bowels with some efficient though mild purgative, and control the febrile excitement by the use of antipyretics—antipyrin and antifebrin. So far as my experience goes mercurials do not appear to possess any special advantage, except possibly that the stomach is not so likely to reject them as it often does more bulky drugs. Doubtless the common, though possibly erroneous belief that yellow fever is only an intensified form of bilious fever, and that the icteric hue is dependent on the same cause as that producing jaundice, and hence the fault laid to the liver, has always attached more importance to the use of mercury in the shape of calomel in this disease than experience justifies. Castor oil, or the more common salines, will be found about as good evacuants of the *primæ viæ* as anything else. Quinine is a useless drug in yellow fever unless there is some evidence of a malarial complication. It may be advantageously used during convalescence, but it is perfectly valueless in controlling the disease. Administered in mild cases, which would naturally recover, quinine often has received the credit of having cut short the fever as a *post hoc propter hoc* conclusion. The refraining from its use, even in mild cases, is advantageous in a diagnostic point of view, for if the fever spontaneously terminates by the end of seventy-two hours, or earlier, the presumption is against it having been of a malarial type. Antipyrin in 10 grain doses every three hours appears to have a very beneficial effect in reducing temperature, promoting diaphoresis, and relieving headache and other pains. Its advantages over antifebrin are its analgesic properties and greater solubility which renders its administration by enema in 20 or 30 grain doses almost as efficient as when administered *per os*. And this method of administration sometimes becomes necessary on account of nausea and excessive irritability of the stomach. The use of opiates is always hazardous, unless there was some way of determining anterior to the third day that no nephritic complication

would be developed, as their tendency is to induce suppression of urine. Of course in mild cases in which there is no albumin in the urine it is not certain that their use is hurtful, but the difficulty as to their use arises from our inability to determine this very important point as to the nephritic complication; and hence the safe rule is to eschew the use of opiates entirely in the treatment. An occasional exception to this rule may be made in cases presenting other complications and where the kidneys are not, or only slightly, affected.

As to food and drink, the less taken the better, so as to keep the stomach as quiet as possible. Cold drinks are decidedly injurious in the great majority of cases. Hot drinks are borne much better, and hence, doubtless, the common practice of administering lemon leaf and other teas. Possibly the benefit derived from these hot drinks is dependent on their constricting effect on the capillaries of the mucous coat of the stomach, on the same principle that injections of hot water are used in gynecology. For nourishment a tablespoonful of equal parts of milk and lime-water may be given every two hours, though if the patient is not naturally feeble "Tannerism," or starvation, may be practiced.

In the graver type of cases with the nephritic trouble, no line of treatment after the third day, promises any certainty of success. So long as the quantity of albumin in the urine remains comparatively small and the kidneys continue to act tolerably freely there is encouraging hope of the patient "pulling through," though there is no means of telling when or how soon the action of the kidneys will become fatally impeded or suppressed, and the case terminate in stupor, convulsions and death with or without black vomit toward the end. It is in this class of cases that we are constrained to recognize the impotency of our art and our utter helplessness in the presence of this dread disease. In this latter stage the tincture of digitalis in 10 to 15 drop doses every two or three hours may prove of some advantage as a heart tonic and diuretic. Of course, alcoholic preparations are indicated to sustain the flagging vital powers; but, unfortunately, like a great many other remedies, disappointment is only too frequently the result of their use. In the mild cases without the nephritic trouble alcohol is rarely indicated, it may be occasionally indicated in the nephritic cases where the quantity of albumin is small and the kidneys act fairly well, while in the worst grade of cases, it, like everything else in the way of remedies, is likely to prove of little avail.

No remedies proved specially useful in relieving nausea and hiccoughs. Cocaine was tried without benefit. Carbolic acid in small doses proved a failure. In fact nothing but as complete abstinence as possible from food and drinks appeared to do any good.

NOTE.—These observations are based upon 130 cases that I have treated myself, in which the urine was tested, besides seeing a large number in consultation where the urine was examined also. Dr. J. Y. Porter, who was here during the epidemic and had charge of the Fever Hospital and the Government relief measures, admits that his observations tally in the main with mine.

THE FORMATION OF AN ARTIFICIAL URETHRA FOR PROSTATIC HYPERTROPHY.

*Extempore Remarks before the Medical Society of Virginia,
Wednesday Evening, October 24, 1888.*

BY HUNTER MCGUIRE, M.D.,

EX-PRESIDENT OF THE MEDICAL SOCIETY OF VIRGINIA; SURGEON
TO ST. LUKE'S HOSPITAL, RICHMOND, VA.

After relating a case in which members of the Society were personally interested, Dr. McGuire said that this is the way that men usually die (by surgical kidney) who have serious obstruction to the passage of urine. In both sexes, and at all ages, mechanical obstruction to the passage of urine from the kidney ends in cystitis, ureteritis, pyelitis and pyelo-nephrosis. Obstruction may be due to stricture, enlarged prostate, tumor, stone, etc. It ends sooner or later in surgical kidney.

A very common cause for this is an enlarged prostate. This comes on after the age of 55 years. As far as Dr. McGuire's experience goes, if a man escapes this trouble until he is 63, he is not apt to have it. We all know how common it is in old men—so common that he sometimes wonders that it was not included in that wonderful description of old age found in the last chapter of Ecclesiastes. Possibly senile hypertrophy did not belong to that period; but is one of the results of so-called modern civilization. We don't know. We only know that hypertrophy of this gland is, with rare exceptions, peculiar to man. The prostate is a curious body; it is made up of fibrous, glandular and muscular tissue. It would be as well, if not better, to call it the prostatic muscle, than to call it the prostatic gland. It supports the bladder, which, otherwise, is so lightly and so feebly held in its position. The erect posture which man assumes puts a great strain on this body. Indeed, this might be used as an argument that it was intended for man to go on all fours, like the quadrupeds.

When deterioration of all the tissues begins—that is, about 55 years of age or more—this structure may commence to get bigger; it may enlarge toward the bowel, and do little or no harm. But if its growth encroaches in any way on the lumen of the urethra, then trouble begins. Put your finger into the patient's rectum, and you may find the prostate greatly enlarged; and yet

the man may have no evidences of urinary obstruction. And, on the other hand, the finger may reveal to your sense of touch no increase in the size of the gland; and yet there may exist marked prostatic obstruction. There may be new growths, tumors, true myomata which can be only felt by the finger in the bladder. The enlargement may be either centric or eccentric. You cannot reckon the extent of obstruction by the mere size of the gland felt through the rectum. All this depends upon the direction of the growth. Let it encroach, even slightly, upon the urethral canal, and lessen its size, and there soon follows irritability of the bladder, retention of urine, cystitis; and if this goes on, pyelitis and pyelo-nephrosis.

Dr. McGuire saw before him, as he was making these remarks, which he certainly did not intend to make, and for which he was entirely unprepared, many gray headed men who are listening to him with great attention. Some of you "old Fellows" may already know that your prostates are getting larger than they used to be; that it takes you a little longer to make water now; that it is slow to start; that the stream is not sent as far from your body, but drops down between your legs, which you keep wide apart to prevent your trowsers from being splashed. He advises you to try to empty the bladder every time you urinate, and not leave in it some residual urine which will decompose, just as it would do in a dirty chamber-pot, and afterwards set up in your bladder irritation and inflammation. Take care also to keep your body, and especially your feet, dry and warm. Don't sit on a cold stone or a wet saddle. Keep your bowels open, and let whisky alone. If the enlargement goes on increasing, and the calibre of the urethra is more and more diminished, more prominent and urgent symptoms are presented. Sudden retention of urine may occur, requiring the use of the catheter; or (and this is just as frequent) the patient will tell you that he cannot hold his water; that he has incontinence of urine. This condition generally means that his bladder is distended with urine, and overflowing; and the catheter is required here to relieve the over-distension. It would be out of place for him to talk about antiseptics and germs now. But it is not out of place for him to beg you to keep your catheter clean. A dirty catheter is a very dangerous instrument.

After a longer or shorter time, this enlarged prostate forms a dam at the outlet of the bladder, and only the water above the level of the dam escapes during micturition. Some urine, which is called "residual urine," is always left in the bladder. This decomposes, becomes ammoniacal, is an irritant and sets up cystitis. The poor sufferer strains violently to make water. This tenesmus of the bladder provoked by the obstruction, injures the vesical end of the ureters. These

tubes become involved, and the disease extends to the pelvis of the kidney, and presently to the kidney itself. Try to prevent this cystitis if possible. You may know that it is coming on by the irritability of the bladder; by the frequent calls to micturition; by his telling you that he never feels "like he is done" when he makes water; by his sense of weight, fulness and discomfort about his bladder, and by the other symptoms that have been mentioned. It is not worth while to try drugs of any kind, or dilatation by bougies to lessen the size of the prostate. Dr. McGuire has spent a good deal of time and money in endeavoring to reduce the gland by electrolysis. In his hands it has done no good. The only good you can do is by using the catheter—a clean gum catheter—letting the dirty residual urine escape, and, if need be, by washing the bladder clean with hot water. At the same time, you must attend to his general health and modes of life. Very often in this way the man will go on for months very comfortably. Sometimes the enlargement, if it be due to simple congestion and irritation, will pass away under this course, and the parts will be restored to their normal state. But if the enlargement be due to a true fibroma, or myoma, or if the hypertrophy be diffuse and fixed, then you may be sure the trouble will increase, and you will soon come to a period when palliation is no longer possible, and you must resort to operative measures.

It is wonderful how long a man may use the catheter, and the bladder retain its power of expelling the urine when you make a free opening into that organ. One of Dr. McGuire's patients has used the catheter for three years, never once in all of that time passing a drop of urine through the urethra without the aid of an instrument. As soon as an artificial urethra was made for him he could send the urine in a steady stream three feet from his body. In this case, the prostatic obstruction was so great that he often spent half the night trying to get the catheter into his bladder. When his bladder was opened, and the finger introduced, it was found that long-continued vesical tenesmus had pushed a part of the bladder down behind the prostate, making a pouch or cul-de-sac there, two inches deep; and in this pouch, what had not been suspected, a large prostatic stone. Dr. McGuire had sounded this man repeatedly for stone, and had not found it. A very short time afterwards another man was brought to his hospital—a poor old preacher who had been in bed for seventeen months with fearful cystitis from prostatic hypertrophy. He, too, was sounded as carefully as possible for stone, but none found. When his bladder was opened to make for him an artificial urethra, the first thing felt by the finger was a stone down in a pouch behind the prostate.

Dr. McGuire has operated for stone in the blad-

der, one way or another, 150 times or more, and this confession seems a strange one; but it is nevertheless true, and he believes before he operated in this way for prostatic hypertrophy that he has overlooked more than one case of stone in the bladder in such subjects. The first one of the patients referred to was one of the cases in which he had tried electricity, using an intense current after Apostoli's plan. When he put his finger through the bladder on this prostate, which was literally as big as his fist, and had, along with this general hypertrophy, numerous large and small, hard nodular growths or tumors on its vesical surface, he felt how idle had been his effort to do any good in this way; and he has put out of sight and out of reach his expensive prostatic and vesical electrodes. If after what he has said about them, any Fellow wants them to try, he will cheerfully give them to him.

After you have exhausted the use of the catheter and palliatives generally, you must open the bladder and let the urine drain away, and give to the bladder and to the man, too, a rest which both sadly need. This is the only way by which you can possibly cure the cystitis and prevent disease from reaching the kidney. It is the only way by which you can stop the pain, or lessen the size of the prostate, or restore that man to anything like his normal condition. Now, how to do this?

The first time Dr. McGuire operated for stone by the supra-pubic method, he was struck with the fact that the bladder contracted as soon as an opening was made in its anterior wall, with a force sufficient to drive out every drop of liquid it contained, and that there was no more need for drainage tubes after supra-pubic cystotomy than there was after perineal lithotomy. The bladder is not an inactive bag, as you would expect to find it in a dead or paralyzed body. Its walls contain elastic and muscular forces which, in the natural state, are resisted by the same kind of structures at its outlet. But when an artificial opening is made in the bladder at any point, the muscular and elastic tissues in the walls of the organ contract and keep the viscus empty of any fluid. Recognizing this fact, he abandoned drainage tubes after supra-pubic cystotomy, as after many years we all were led to do after perineal section for stone. It was this principle that had led him to attempt the formation of an artificial urethra for prostatic hypertrophy.

The operation is very simple. You inflate the rectum with a rubber bag, which pushes the bladder up above the pelvic brim. Inject the bladder with water to make it prominent. Cut in the median line through the skin and superficial fascia from the symphysis pubis to a point three inches above. Separate, with the handle of your knife, the recti muscles. Cut through the transversalis fascia upon a grooved director. With the handle of the knife go through the fat and

loose cellular tissue in front of the bladder. Catch this organ, now exposed to view, with a tenaculum, and open it with the point of your knife. Carry your finger into the bladder, and examine it. Open the bladder as low down as you safely can—not higher than the top of the pubes. Let the water out of the rectal bag and remove it. The bladder will then fall back into the cavity of the pelvis. Take one or two stitches in the lower part of the wound through the skin. Don't include the muscles in your sutures. When completed, the opening in the bladder should be as low down as you can get it, and the opening in the skin at the upper end of the incision.

For several hours, to permit the wound to glaze, and for the sake of cleanliness, he uses a large drainage tube through this track. Keep the urine acid, for acid urine is aseptic, and this is the nearest approach you can get to antiseptic dressing in cystotomy. The urine will drain through the wound as fast as it is formed; and if all goes well for two or three weeks, the opening will be reduced to a fistulous track which will admit a good size bougie, say a No. 10 or 12, American scale. Now the man will begin to urinate through the fistula at will. He can retain the water two, three or four hours, and in one of his cases as long as six hours, without dribbling, and pass it when he desires. The fistula does not leak, no matter what may be the position of his body, unless he contracts his bladder to make water, or the urine accumulates to a point above the level of the top of the fistula. If the operation is properly performed, the fistula should be from $2\frac{1}{2}$ to $3\frac{1}{2}$ inches long, and occupy the same relation to the bladder that the spout of a coffee pot does to the pot.

The operation is so simple, comparatively so free from danger, involves no important blood-vessels nor nerves, is made at a safe distance from the peritoneum, and requires for its execution only a knife, a pair of forceps, tenaculum, and grooved director. Indeed, if carefully done, he has found it so safe that he does not hesitate to perform it in cases of diseases of the bladder where the diagnosis is difficult or impossible, simply that he may explore the bladder. If a laparotomy for diagnostic purposes is justifiable, the much less hazardous undertaking of making a supra-pubic cystotomy for the same purpose is certainly so. You will at least do this good: Drain the bladder and put it at rest, which in cystitis is worth more in one day than any drug or set of drugs would be worth in a month. It is astonishing to see how soon the patient begins to improve after the opening is made. The urine soon becomes free from mucus, pus and blood, which it formerly contained in such abundance. The vesical tenesmus and irritability rapidly pass away.

In one of his cases, a man 69 years old, so fee-

ble that he could, unaided, barely walk across the room, and reduced almost to a skeleton, in six weeks fattened fifteen pounds and could walk two or three miles without fatigue. This man got out of bed in sixteen days after being cut, and soon afterwards went about his business, wearing over the opening, to prevent chafing, a bit of absorbent cotton.

In his cases, Dr. McGuire had had, for the first two months, no trouble to keep the artificial track open. If the obstruction at the neck of the bladder is great, you need not expect the fistula to close at an early day, even if you introduce nothing into it. But at the end of about eight weeks, the prostate will diminish in size, all congestion and inflammation will disappear, and Nature will now make an effort to send the water through the natural urethra, and close up the artificial one. In the case just referred to, at the end of the eight weeks the man got up one morning, made an attempt to pass the urine through the artificial track, which was temporarily closed by a clot of mucus, and to his surprise, found the urine passing through the natural urethra. This was the first water he voided in that way for more than three years. Another interesting fact in regard to this patient: For the first time in ten years he has had a return of some sexual desire and power. All this goes to show the improvement which has taken place about the neck of his bladder. But at the end of eight or ten weeks the track must be kept open by the daily use of bougies, or by the introduction of a silver or a hard rubber plug as long as the artificial urethra, and about the size of a No. 8 or 10 American scale bougie. This should be kept in an hour or more every day.

NEURALGIA OF THE LINGUAL BRANCH OF THE RIGHT TRI-FACIAL NERVE.

Read before the Medical Society of the District of Columbia, May 27, 1888.

BY SAMUEL C. BUSEY, M.D., LL.D.,
OF WASHINGTON, D.C.

Mrs. A., æt. 63, has suffered for seven years with a painful affection, which she describes as follows: Six years ago, while residing in the State of Florida, after much reading aloud for several weeks, she was seized with an acute paroxysmal pain, beginning at the root of the tongue and extending along its right border to the tip. At first it came in quickly recurring flashes of momentary duration followed by longer or shorter intervals of complete freedom; but as the time passed the painful periods became more frequent, and the paroxysmal pains increased in duration and intensity until, finally, these periods would last for several hours, during which the pain would come and go. The first attack began in the autumn and continued until spring set in.

No method of treatment, either by local applications or internal medication, afforded any relief. Hypodermatic injections of $\frac{1}{2}$ grain of morphine failed even to mitigate the suffering.

During the six succeeding years, in the early autumn, with the beginning of the first cold snap, her suffering had commenced only to terminate with the coming of mild weather of returning spring. After the attack was over last spring she abandoned Florida as a place of residence, passed the summer in the North, and came to this city early in the autumn of 1887. As usual, during the past summer she was entirely free from pain and enjoyed her accustomed good health. In the month of November last, during an inclement day, whilst in a green-house, she felt the first twinge of pain along the right border of her tongue, which came and disappeared in less time than it took to tell of it. It, however, followed the course of the previous seizures, continuously increasing in frequency and intensity.

On December 10, I saw her for the first time. I found a lady of marked intelligence, with a bright and cheerful disposition, remarkably well-preserved, and with a history of unusual good health throughout her life. Her appetite was good, bowels regular, and habits of life regular and suitable for one of her age. There was no circumstance of life or physical infirmity with which her suffering could be associated in the relation of cause and effect beyond the facts stated by the patient and elicited by examination. During this interview, whilst narrating the history of her case, she was seized with the usual pains, sometimes at intervals of one and then of several minutes, which varied in duration from a few seconds to a minute or more, and in acuteness from a mere passing flash to momentary agony, which would be exhibited in distortion of the face expressive of great suffering, followed, as it suddenly ceased, with the returning smile of relief and the utterance of the words "gone again." These paroxysms of pain far most frequently began at the base of the tongue and darted along the right border to the tip; but sometimes one would begin at the distal end of the right anterior dental branch of the fifth pair; another in the inferior dental, behind the angle of the lower maxilla; then one would seem to start from numerous points on the right side of the face; but wherever the locality of beginning the pain always reached its maximum intensity and remained longest along the course of the right lingual. During pain conversation was always suspended, because of inability to articulate. Sometimes the interruption of speech would begin with the utterance of the first or second syllable of a word. The cessation of the darts, pangs and longer paroxysms of pain was as sudden as the onset, beginning without warning and ceasing at maximum intensity. There was no oscil-

lation with gradual increase in degree and gradual decline to ease. During the periods of painful seizures, which included several or many momentary or longer paroxysms of pain, the right buccal cavity became very dry, and the tongue was thickened and dry along the right border. During sleep the periods recurred less frequently and did not continue so long. There were fewer pangs or paroxysms of pain, but they were equally intense and sudden in onset and cessation.

The seizures were induced by conversation, drafts of air upon the right side of the face, by surprise, the unexpected entrance of a person into her room, a quickly spoken word by one not engaged in conversation with her, a startling noise, falling temperature or inclement weather, by attempts at chewing on the right side, by efforts to swallow liquids—unless the fluid was confined to the left buccal cavity—by every attempt to masticate and swallow bread or potatoes, and by every movement of the tongue which approximated it to the roof of the mouth. Meats could be chewed on the left side of the mouth and swallowed with facility and ease. I attempted, without success, to produce pain by pressure, rubbing and pricking the right border of the tongue and buccal surface, by jarring the upper and lower teeth on the same side, and by pressing, pricking, rubbing and pinching the external surface. Every attempt to produce artificially any condition similar or apparently identical with the current circumstances, before recited as exciting agencies, failed to induce a fleeting pang or paroxysm. For instance, the attempt to chew food on the right side would quickly induce pain, but the striking of the crowns of the teeth with a piece of metal or the pressure of the finger upon them failed. The movements of the tongue in articulation would, but the enforced movements of the organ would not excite pain.

The patient felt convinced that she was the victim of an incurable disease. All medication had failed; in fact, in very many instances she felt that her suffering had been increased by efforts to cure. She had tried a change of climate, place of residence and broken up a long established routine of life without securing relief. The pain began with the autumnal fall of temperature and departed with its rise in the following spring. Season seems to have been the constant and unfailing etiological influence. All the other circumstances and conditions were ineffective except during the season of inclement weather and low temperatures. The fluctuations of temperature, and sudden falls occurring during the seasons of rising and high temperatures, even when associated with inclement weather did not produce a period of suffering or even a paroxysm of pain. I advised the lady to have prepared a protector to cover the entire right side of her face, and suggested the trial of electricity.

My second interview took place December 14. She had kept the side of her face protected with a soft warm pad, lined with silk, but the periods of suffering had increased in frequency and duration, and the pains had increased in intensity. I then advised the application of a 4 per cent. solution of cocaine along the course of the right lingual nerve. The next day she expressed the opinion that the applications of cocaine had diminished her suffering, in that the periods of painful seizures had been shortened. I advised its continuance and ordered a mixture containing the salicylate of soda with the oil of gaultheria. This treatment was continued for one week without satisfactory results. I then advised the continuous use of morphia sulphate in $\frac{1}{8}$ grain doses, to be repeated at such longer or shorter intervals as might prove necessary to control the pain. The lady very reluctantly consented because she had lost faith in drugs, and was averse to the use of morphia. She did not follow the method of treatment very assiduously, but sufficiently so to obtain very marked relief. The months of January and February were passed in comparative comfort. With the returning mild weather of spring, the pain, as during the six previous seasons, entirely ceased. The best that can be said is that she suffered very much less than during the same season of either of the previous six years, but a cure cannot be claimed.

Perhaps, a more decided result would have been obtained if the plan of treatment had been more diligently employed.

The history of the case points very clearly to season as the predisposing and determining cause. In this particular there is nothing peculiar. But the curious array of accidental and incidental conditions which would produce longer or shorter periods of paroxysmal pain is certainly surprising, if not unique. Then, too, the paroxysms would recur during sleep, when the incidents detailed could not occur, either singly or concurrently. This fact also points to season as the predominant etiological factor.

Peripheral irritation produced by the movements of the tongue in speech, mastication and deglutition, and certain articles of food was a frequent and direct exciting agency in bringing on pain. Emotional conditions, such as surprise and the unexpected presence of a person, were equally effective. During sleep these influences were in abeyance and the paroxysms recurred much less frequently, but with equal severity. Sudden falls of temperature and inclement weather, during the autumn and winter seasons, even though the patient remained in-doors during such atmospheric changes, would also induce attacks.

The initial attack began under like conditions and circumstances for seven successive years, and followed the same course, the paroxysms gradu-

ally and continuously increasing in frequency, duration and intensity during the autumn and winter seasons, and ceasing abruptly with the beginning of spring-weather. The pain was always limited to branches of the right tri-facial, but the point of beginning varied. Far most frequently it began at the base of the tongue and was limited to the right lingual branch. When beginning at other points it was expended along the course of that nerve.

CANCER OF THE INTESTINE.

*Read before the Medical Society of the District of Columbia,
May 23, 1888.*

BY G. WYTHE COOK, M.D.,
OF WASHINGTON, D. C.

C. H., a mulatto woman, married, æt. about 38 years, was first seen by me on November 11, 1887. She gave the following history: She has always suffered more or less at her menstrual periods. About six years ago she had a miscarriage, since which time she has not been pregnant. Has suffered for a number of years from hæmorrhoids. Of late has had much pain in defecation. During last March she noticed an enlargement of her abdomen, and in May following her physician made a vaginal examination and introduced a sound into the uterus. Since that time she has not menstruated. She has been under the care of several physicians, but has continued to grow worse. She has been taking morphia and belladonna in suppositories to relieve her pain. She is now much emaciated and has had a diarrhœa for several days, her temperature is 102°. There is a fluctuating tumor just above the pubis and extending entirely across the abdomen. It is very painful to touch. Vaginal examination shows the uterus enlarged and fixed, but the examination is unsatisfactory, owing to the pain produced in the manipulation. No positive diagnosis was made, but medication was directed to the control of the diarrhœa; this was partially successful after a few days' treatment. A large hæmorrhoidal tumor, about an inch in diameter, was now protruding and caused much suffering. To relieve this the tumor was injected with carbolic acid and glycerine with most satisfactory results. The hæmorrhoid disappeared entirely and the patient expressed herself as much more comfortable than she had been for a long time.

After this the diarrhœa was pretty well controlled, and less morphia was necessary to soothe her pain, but there was no change in the abdominal tumor. A few days later I was told that a profuse diarrhœa had set in, and the discharges were described as being of a slimy, pasty character. I found the tumor much reduced in size, and I at once concluded that it was a subperitoneal abscess, and that it had discharged through the

bowel. From this time there was continued diarrhoea for four or five weeks, with temperature ranging from 100° to 103° , with a general typhoid condition. After this there was relief of the diarrhoea for a time, but the temperature continued elevated and abdominal tenderness persisted, notwithstanding the free use of counter-irritation and opium. The tumor seemed to fill up again and presented very much the same general characters that it did at my first visit. I was never able to make a thorough examination, owing to the great suffering produced by any manipulation of the tumor. There is nothing special to say regarding the progress of the case, other than that the patient steadily grew worse, with great pain in the lower part of the abdomen and pelvis and much intestinal disturbance. Her appetite was remarkably good, and she ate an egg and some bread and butter the day she died. This occurred on the 21st of April, 1888, from exhaustion. Several times during my attendance upon the case I suggested the advisability of a consultation, and expressed the opinion that some operation might be necessary for her relief, but the patient was unwilling for anything of the kind, so no consultation was held.

With the light of the autopsy before us, it is well that no operation was undertaken, for, aside from the malignant character of the tumor, it was so firmly bound down by adhesive inflammation that it would have been impossible to have removed it successfully. The specimen presents some interesting points:

C. Z. H.—mulatto, æt. 38, married. Died April 21, 1888. Necropsy by Dr. D. S. Lamb. Much emaciation. Pleuritic adhesions at apex of each lung. Both lungs showed abundance of cheesy masses, varying in size from that of a pin-head to nearly an inch in diameter, most numerous and largest in upper lobes, where also were many cavities, some of which communicated with each other. Heart small, normal. Liver, spleen and stomach normal. Lower end of ileum showed many small ulcers, near mesenteric attachment; a few similar ulcers in ascending colon. Mucous membrane normal up to within 4 inches of anus, where was a perforation $\frac{1}{2}$ inch in diameter, with congested margins. Nearly 1 inch higher up was another perforation, oval, transverse to axis of intestine, about two inches long and one wide, with congested margins. Both openings led into a sac the size of a new-born child's head, and containing soft dark feces. The wall of the sac was thin and generally covered with peritoneum; adherent to uterus, upper part of vagina, rectum, wall of pelvis, cæcum and several folds of small intestine. It was easily removed from the wall of pelvis. Inner surface of sac corrugated, looking like bands of involuntary muscle. For some distance around the perforations the sac wall showed a somewhat flattened growth,

about $\frac{1}{2}$ inch thick at the thickest part and ulcerated. Uterus normal; vagina normal; right round ligament normal. Fallopian tube and fimbriated end not distinct. Left tube visible for a short distance, then lost in the mass of adhesions; ovaries not visible. Kidneys normal. Bladder somewhat distended.

Dr. W. M. Gray, of the Army Medical Museum, says the cheesy masses of the lungs are tubercular, and the new growth near the rectum is cancerous.

ANEURISM OF THE ARCH OF THE AORTA AND SUBCLAVIAN ARTERY.

Read before the Medical Society of the District of Columbia, June 6, 1888.

BY JOHN B. HAMILTON, M.D.,

SUPERVISING SURGEON-GENERAL, U. S. MARINE HOSPITAL SERVICE;
SURGEON TO THE PROVIDENCE HOSPITAL, WASHINGTON, D. C.

The following case of *aneurism arch of aorta and subclavian*, reported for me by Dr. Carmichael, M. H. S., occurred under my observation at the Providence Hospital, Marine Ward:

Gordon Fitzhugh (negro), æt. 48 years; nativity, Virginia; admitted to Providence Hospital, Washington, D. C., April 6, 1888; died June 1, 1888.

History.—He was first admitted to hospital on February 14, 1888, suffering from severe dyspnoea, coryza and acute laryngitis. Examination revealed the presence of a subclavian aneurism and regurgitant mitral disease of the heart. A murmur was also heard at the aortic cartilage, but it was partly obscured by the blowing sound of the aneurism. Under appropriate treatment the coryza and laryngitis subsided; while rest in the recumbent position and the administration of potassium iodide, in doses of 1.20 gm., relieved the distressing dyspnoea. He improved until March 2, 1888, when, at his own request, he was allowed to go to his home. On April 6, 1888, he was readmitted to hospital in great distress, and under treatment he again somewhat improved; but the paroxysms of dyspnoea recurred at shorter intervals; were more distressing, and his strength was much reduced. The pulsation of the tumor in the neck and the accompanying thrill and bruit were strongly marked. Auscultation revealed a loud murmur over the mitral area, transmitted towards the base of the scapula. He grew much worse during the latter part of May; delirium set in on the evening of the 31st, and at 11 P.M. he died.

Necropsy.—(Nine hours after death.) Body fairly nourished. Rigor mortis present. Brain not examined. Lungs emphysematous at the borders and congested throughout. Heart very large, and walls of ventricles show beginning fatty change (compensating hypertrophy succeeded by dilatation and fatty degeneration). The ascending and transverse portions of the arch of the

aorta were dilated into a large aneurismal tumor, and the right subclavian was also the seat of a large aneurism which, having ruptured, could not be removed from the body in its entirety, owing to the numerous and intimate attachments to the surrounding parts. The thymus gland was extremely large, and accompanies the specimen. The gland had evidently continued to grow during adult life. The heart was very large, and the walls of the ventricles the seat of fatty change; the tricuspid and pulmonary valves were healthy; the mitral was the seat of atheromatous patches and nodules, and the valve was incompetent. The semilunar valves of the aorta were thick, leathery, the aortic orifice somewhat narrowed, and numerous deposits of calcareous material were found on the valves near their margins. The liver was fatty in patches. The kidneys were congested and the other viscera were healthy.

MEDICAL PROGRESS.

WOUND OF INTERNAL MAMMARY ARTERY: HÆMATOMEDIASTINUM.—A remarkable case under the care of PROF. MADELUNG has been reported in the *Berliner Klinische Wochenschrift*, and in the *Centralblatt für Chirurgie*, No. 19, 1888. On September 2, a man, aged 39, was stabbed with a knife in the head, thorax, and abdomen, but little hæmorrhage was noticed. He walked one hundred paces, reaching his dwelling, where it was found that intestine had prolapsed through the abdominal wound. Twenty hours after the injury he was taken in a wagon to the Rostock Infirmary, after a journey of over an hour. The intestine was reduced, having been left alone till admission, and the abdominal wound sewn up. The thoracic wound was on the right side, parallel to the third rib, beginning close to the border of the sternum. It was four-fifths of an inch long, and no blood escaped from it at the time; it was drained and sutured. There were no signs of cardiac or pulmonary mischief. On the evening of September 13, after doing well for many days, pain and dyspnoea troubled the patient, and hæmorrhage occurred from the thoracic wound, which recurred on the evenings of the 14th and 15th, so that the patient became anæmic. On September 16, Dr. Madelung opened the wound. The right third costal cartilage was cut through close to the sternum. Arterial hæmorrhage was observed above and below the cartilage, about an inch of which was resected. A cavity in the anterior mediastinum, "the size of a goose's egg," was exposed; it was full of clot. An inch of the fourth costal cartilage was resected; in so doing the operator opened the pericardium. Apparently that serous sac had been opened by the stab, and

had speedily closed, the operation breaking down the adhesions which closed it. Much hæmorrhage accompanied the opening of the hæmatomediastinum, the blood gushing from the lowest part of the wound. Dr. Madelung therefore tied the internal mammary artery in the fifth intercostal space, in its continuity, when the hæmorrhage ceased. The cavity was packed with iodoform gauze, and a tampon of the same material was placed over the wound in the pericardium. The patient recovered. Dr. Madelung believed that the abdominal wound did well because no clumsy attempt to reduce the gut had been made by the patient's friends. He insists that, when the internal mammary artery is divided, both ends should be secured, on account of the innumerable anastomoses, especially with the deep epigastric.—*Brit. Med. Jour.*, Sept. 15, 1888.

SENSITIVE DENTINE.—One of the difficulties to be overcome in tooth filling is the occasional extreme sensitiveness of the dentine; and it requires considerable courage on the part of the patient to submit to the necessary cutting. Healthy dentine is endowed with but little sensibility, for if a tooth be accidentally chipped so as to expose a portion of the dentine without opening the pulp chamber, it can at first be touched without giving rise to pain, but after twenty-four hours' exposure to the fluids of the mouth it becomes irritable. Hyperæsthesia of the dentinal fibrils may follow any form of exposure—that due to caries, erosion, or fracture; and when present it varies considerably in intensity, not only in different teeth, but in different parts of the same tooth. Immediately under the enamel, in proximity to the pulp, especially the fibres radiating from the cornua of and just beneath the appreciably softened carious bone, are the situations of greatest sensibility. The two former are explained by anatomical facts. The dentinal fibres end at the periphery by forming a dense network, and open into the so-called inter-globular spaces, which, however, are filled with protoplasm similar to that contained in the lacunæ of bone, the whole forming the granular layer of Tomes, and near the pulp the fibrils are both more numerous and of larger calibre. The deepest portion of the diseased bone is probably most sensitive, because here the calcareous material has been removed, exposing the fibrils, while it has not gone far enough to destroy them. It will readily be understood from this that superficial cavities are often very sensitive; then, as the disease progresses and this portion of the dentine is destroyed, there comes a time when there is but little pain from contact with acrid fluid or solid substances, but acute sensitiveness is again met with as the pulp is approached. Other things being equal, soft teeth, from their relative greater quantity of organic matter, will be more sensitive than hard

teeth, although there are many exceptions to this rule; also the teeth of the young more than those of the aged. The various methods of treatment may be summed up under the following heads: (a) operative measures, (b) desiccation, (c) cauterization, (d) local anæsthesia; and this is probably the order of their efficiency, although combinations are often valuable. (a) Sharp instruments, rapid motion of the engine, and taking advantage of anatomical knowledge by cutting away from the pulp and its cornua and across the line of the fibrils, will suffice in most cases. After the insertion of a temporary plastic filling for a few months, it will generally be found that most of the sensitiveness has disappeared; and this is the best of all treatment if the patient is under constant supervision. (b) In order to get thorough dryness, the rubber dam must be adjusted and the cavity swabbed out repeatedly with cotton wool dipped in CHCl_3 or absolute alcohol, or, better still, a current of hot air passed through the cavity. Chloride of zinc acts partly as a desiccator and partly as an escharotic, but its application is usually very painful, and its use contraindicated when the pulp is near. (c) Carbolic acid, chloride of zinc, nitrate of silver, and caustic soda all have their advocates—carbolic acid, perhaps, being the most general favorite. Arsenious acid left in for a few hours is most efficacious; but, owing to the numerous cases of death of the pulp resulting, is now rarely resorted to. (d) Cocaine alone, or in conjunction with sulphuric ether, although of great use as a local anæsthetic in treating pulps, has not proved of much service for sensitive dentine, as it is not readily absorbed. Other drugs, such as menthol and aconite, are equally disappointing. Dr. Ottolengui's method seems, as far as experience has gone, to give good results. He first dries the cavity with hot air, and sometimes uses carbolic acid as an escharotic, and then anæsthetises the dentine with ether spray. It is maintained that the pain produced is far less than the operation of cutting by any other method. It may be interesting to note the statement that, where teeth are forcibly wedged apart for the purpose of gaining room for filling, the pain of excavating is much diminished, presumably from constriction of the nerve as it enters the apical foramen. Cocaine injection into the gum, as used for extractions, has also been recommended, but has not given encouraging results.—*The Lancet*, Oct. 27, 1888.

SALICYLIC ACID IN MALIGNANT SCARLATINA.—DR. A. SHAKHOVSKY emphatically recommends (*Novosti Terapii*, No. 6, 1888, p. 208) the salicylic treatment of scarlet fever, the recommendation being supported by 125 malignant cases of the disease, with only three deaths. He always employs the following formula: R Acid; salicylic; gr. xv.; aq. distill. fervid., 3ij; syrup. au-

rantior, 3j.; M.S. From a teaspoonful to a tablespoonful every hour during the day time, and every two hours by nights. The solution of the acid is said to be perfect, as well as palatable. In about two or three days the patient's temperature falls from 41°C . down to 38.5° or 38°C ., reaching 36.5°C . about the tenth day of the treatment. To prevent any relapse (of fever and all) the mixture must be administered every two hours for two or three days after the defervescence. Dr. Shakhovsky assures that salicylic acid, when administered after his plan, successfully prevents all complications (such as uræmia, dropsy, diphtheroid anginas, lymphadenitis, etc.), and even rapidly removes them when they are present. The salicylic treatment fails, according to his experience, (1) when it is resorted to too late (later than a fourth day of the disease of a malignant form), and (2) when there are simultaneously present certain severe chronic diseases or serious congenital defects.—*Provincial Medical Journal*, October 1, 1888.

BENZOATED CHLOROFORM.—DR. B. W. RICHARDSON recommends the use of benzoated chloroform as an antiseptic of considerable service in the treatment of foetid wounds. It is made by dissolving three drachms of pure benzoic acid in twelve ounces of chloroform, and filtering if necessary. In a case of foetid ulcer of the lower extremities, after the bandage has been applied, he prescribes a fluid drachm of the solution poured over or near the ulcer, the deodorizing effect being of the best character. He states that the solution is also the most effective that he knows of for removing the fœtor in troublesome cases of foetid exhalations from the feet. Used like eau de Cologne, he finds it advantageous to rub over the hands at a post-mortem examination, and for similar purposes where a disinfectant is required.—*Asclepiad*, Vol. v, No. 19.

PILOCARPINE IN DEAFNESS.—M. BÖCKE stated at the recent Otological Congress at Brussels that he had used pilocarpine in 14 non-selected cases of deafness. The causes of deafness were cerebro-spinal meningitis in 5 cases, a fall on the head in 4 cases, various pathological lesions of the middle ear in 2 cases, drugs (sulphate of quinine, salicylic acid) in 2 cases, and an affection of the tympanum in 1 case. Of the 14 cases 7 were of several years' duration, and 7 of from 3 weeks to 6 months. The quantity of pilocarpine given in each case was from 65 to 560 millig. The duration of the treatment was from 2 to 6 weeks. Some amelioration was obtained in 3 cases, in one of which the deafness was due to cerebro-spinal meningitis. Böcke concludes that the results of the pilocarpine treatment are discouraging. ROHRER has used pilocarpine with good results in deafness due to labyrinthine lesions, the hearing increasing from 2 cm. to 2 or 3 metres. He gives 5 millig. internally, three times a day.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.
PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, NOVEMBER 17, 1888.

THE MEDICAL EXAMINING BOARD OF
VIRGINIA.

Most of our readers—all who are interested in higher medical education—will be glad to learn that the Medical Society of Virginia, at its recent annual meeting at Norfolk, showed its appreciation of the valuable work done by the Board of Medical Examiners by re-electing the whole Board, with the exception of Dr. Lankford, who resigned (though not in consequence of any objection to him as an efficient member of the Board). At this meeting of the Medical Society of Virginia 180 members were present—the largest attendance in the history of the Society—and the action in regard to the Board of Medical Examiner was unanimous; the Society endorsed without a dissenting voice the policy of the Board of Examiners. It is evident, therefore, that the profession in Virginia appreciates the work done by the Board in the cause of medical education, and the Board now begins a term of four years' work, which we hope will be even richer in good fruit in the future than it has been in the past. The opposition that was expected, and which there was every reason to believe would be shown at the Norfolk meeting, did not appear except in the way of some rather uncomplimentary references to THE JOURNAL by a former opponent of the Board. THE JOURNAL has no intention of currying favor with any one opposed to higher medical education, especially when the opposition proceeds from personal motives. We are gratified to have received letters from members

of the profession in Virginia saying that the stand taken by THE JOURNAL in the case of the Examining Board is appreciated.

To the owners, stockholders, and professors of the colleges that have been and are doing discreditable work we would say: You have been weighed in the balance, and are found wanting. There are but two courses open to you; go on as you have done in the past and are doing now, and some day you will find the seal of disapproval, professional and public, upon your permanently closed doors and empty lecture rooms. The other course is to do better work, and when you do this, you will be as much in favor of medical examining boards as the medical men who are loyal to their profession and thoughtful of the public welfare. There are far too many medical colleges in this country. Every new medical examining board created is a nail in the coffin of some unnecessary, low-class medical college. The colleges that hope to survive must begin the work of reformation now. The time will come when even State medical institutions must either place themselves on the side of higher medical education or drop out of existence. Professors in low-class medical colleges may fight boards of examiners, and ask to have *their* students exempted by legislative enactment from the test that will determine whether they are qualified to practice medicine. But they are both in the minority and in the wrong. The mass of the profession is against them, the teachers in the high-class colleges are against them, reason is against them, and the tide of intelligent public opinion is setting against them. Against the right and the majority they cannot hope to win. They must reform or close their doors.

These words are not directed more particularly to one low-class college than another. With the one case in which the teachers of a college declared war against a State Examining Board, and wished *their* students exempted from the State examinations, we have finished, for the present at any rate, since they seem to have seen the error of their ways to a certain extent. But the report of the Virginia Examining Board showed, in a way, that one-half of the colleges in this country are doing bad work—13 out of the 26 colleges whose graduates were examined by the Board. In the editorial in THE JOURNAL of September 6 we

gave a list of these 13 colleges, and some facts in regard to them that go to show that they are not doing good work, and why they should not be classed among high-class colleges. We shall await with interest the next annual report of the Virginia Board of Medical Examiners. Before it can appear, however, the colleges have a whole session in which to begin the work of reform. But if they persist in their former course they can expect only the inevitable.

THE HARVEIAN ORATION.

On October 18 DR. P. W. LATHAM delivered the Harveian Oration before the Royal College of Physicians, "to commemorate the benefactors of the College, and to encourage its members to search out the secrets of nature by way of experiment," in accordance with the express wish of Harvey. Dr. Latham points out directions in which further advances are possible, and suggests routes by which these advances may be made; he pictures some of the discoveries that have been made in modern times in matters connected with the circulation, particularly in reference to some of the changes in the blood that may be associated with or productive of disease, thus indicating some of the additions to Harvey's great contribution to scientific medicine.

Dr. Latham calls attention to the colorless corpuscles of the blood, and asks if there is an antagonism or attraction between these white corpuscles and the bacilli. How are the powers, action, and growth of the colorless corpuscles modified by the presence of micro-organisms? What part do the latter play in the production of disease? Is it true that a large part of all health and disease in the world is dependent upon them? These questions, and our inability to answer them, show the degree of importance that must be assigned to the discovery of these bodies, and account for the large amount of interest now manifested in them. Dr. Latham points out some of the facts that are now known regarding these bodies. There is but little doubt that in some disorders these organisms are the causal connexion, the virus of the disease—as in anthrax or splenic fever. In relapsing fever we have a disorder associated with a bacillus, the organism disappearing and reappearing, and the blood of the infected animal being intermittent in its

power of communicating the disease to other animals. We all know how great interest has centred in the bacillus of tuberculosis, and how carefully this micro-organism has been studied for almost nine years. Following upon Koch's discovery of the tubercle bacillus came Metschnikoff's discovery of the antagonism between the cells and bacteria.

Bacilli may not be destroyed by the colorless corpuscles, however, but may live in the blood and tissues of the animal; what changes do they produce in this case? It seems now that certain chemical poisons are produced, capable of destroying life; as the result of albuminous or proteid decomposition or putrefaction certain animal alkaloids are produced, similar in nature and chemical composition to the vegetable alkaloids. Some of these ptomaines, as they are called, are harmless, while others are more or less poisonous. Had Kerner known this nearly seventy years ago he would not have been at a loss to account for the similarity of the effects of sausage poison to those produced by atropine. We need not go into an enumeration of the different ptomaines that have been discovered and described, since those interested in the subject can obtain what information they desire from the recent work on the subject by Dr. Victor C. Vaughan and Dr. Frederick Novy. Suffice it to say that, knowing the operations of the micro-organisms of fermentation and putrefaction outside the body, analogy would seem to show that the micro-organisms inside the body have similar functions, producing effects that we call disease, caused by the action of the body-microbes. Dr. Latham works out this question carefully, and shows on chemical grounds the possibility that such poisonous products may be produced by disintegration of albumen. He shows also that fatigue may produce these products, even without the intervention of micro-organisms, and suggests that under conditions of lowered vitality our bodies are more readily susceptible to bacterial infection—which is in accord with our knowledge of the etiology of disease.

Dr. Latham's interesting and suggestive lecture shows, to a degree, how vast are the uncultivated fields of medicine. "In the midst of all our weaknesses and all our many errors, we are certainly gaining knowledge, and that knowledge tells us, in no doubtful terms, that the fate of man is in his own hands."

HOW TO DRESS AND WALK.

Last Saturday the women of the Physical Culture Club, of Chicago, listened to a "Delsartian" lecture on "How to Dress and Walk," by a woman who is said to be one of the most accomplished Delsartians in the country. Physical culture clubs among women may be undoubtedly productive of much good; and that women should learn how to dress and walk is important; that they do not know how will be universally admitted. The lecturer last Saturday pointed out that women should abandon the corset, but the reasons seem to be more "Delsartian" than physiological. As far as she went in her advice in this matter she did not go wrong. The lecturer's description of the way to walk was, however, both unphysiological and absurd—though Delsartian. The following was the method given, with illustrations by the lecturer:

"If you put your whole weight on the heel instead of the ball of the foot the tendency is to make the back sink, the abdomen protrude, and the chest to draw in. The first thing for persons who wish to walk well and without effort, and who desire good forms and grace of movement, is to learn to step firmly on the ball of the foot. Next they should throw out and lift their chests as high as possible. Nations and individuals who retrograde are marked by retreating chests and shrinking carriage. There is something about developing a full, high condition of the chest that calls into action all the higher feelings of independence and self-respect."

We ask in all seriousness and with alarm: Is society to be infected with this new "fad," in comparison with which the "Grecian bend," now happily relegated to oblivion, was a blessing? Why has nature provided women with heels if these are not to be used in walking? Fashion and the shoemakers have already done enough in the way of deforming the foot, without the intervention of this new absurdity that tells women to step on the balls of the feet, and thus make walking dolls of themselves. Curious, that mankind, the highest of the animal creation, should be the only living creature that stultifies, deforms and mutilates itself for fashion's sake! Imagine a procession of women on a crowded street, each one stepping firmly on the ball of her foot, and then throwing out and lifting the chest! The heel was made to step on, to bear the whole weight of

the body at the beginning of the step; as the body goes forward the weight is transferred to the ball of the foot, from which the spring for the next step is made. Had the Delsartian lecturer advised her audience to walk on their heels only she could not have committed herself to a greater piece of absurdity than that quoted. Putting the weight on the heel does not make the chest "draw in;" and if it makes the back sink and the abdomen protrude no one is the worse for it. Physiologists will certainly be astonished to know that stepping on the ball of the foot will develop the chest and awaken feelings of independence and self-respect. We were not hitherto aware that our moral intellectuality was located in the foot, and that if we trod on our heels we became slavish and lose self-respect. It would seem that a lecturer on physical culture should at least know something of primary school anatomy and physiology.

THE ILLINOIS TRAINING SCHOOL FOR NURSES.

The eighth annual report of the Illinois Training School for Nurses shows that this institution is in an unusually prosperous condition. The school is now located in its new building, which has ample accommodations for 100 nurses. The mortgage upon the old building still remains unpaid, but the board hopes soon to come into possession of the legacy left by Miss Phœbe L. Smith, when it will then be canceled. The founders of the school are making every effort to secure a fund that will enable them to send its nurses to those who cannot afford to pay for them.

In July last the school took charge of all the nursing in the Presbyterian Hospital, there being five floors and fifteen nurses. In Cook County Hospital the school has ten wards, and during the past year has supplied the county institutions with 107 nurses. One hundred and seventy-seven persons have made formal application to enter the school in the last twelve months. Of this number fifty-nine have been received as probationers and thirty-eight accepted after the trial month, the remaining twenty-one having failed for inefficiency. Six nurses were dismissed, one left on account of ill health, and two were married. The average number in the school has been sixty eight. The June graduating class numbered eighteen. The number of nurses now

in the school is sixty-six, with nine probationers and fifty registered graduates.

In September last the curriculum of study was revised, and the following text-books adopted: "The New Haven Hand-Book on Nursing," supplemented by Clara Weeks' "Text Book on Nursing," Hutchinson's "Anatomy and Physiology," Potter's "Compendium of Materia Medica," and as a reference library the standard works on anatomy, physiology and obstetrics. The students have opportunities for a broad and practical teaching at the bedside of the sick, as the school cares for an average of 500 patients daily. Lectures and classes begin the middle of September, and close the last week in June.

The almost unparalleled growth and success of the institution is due, in great measure, to the efficiency and faithfulness of the superintendent, Miss Hampton.

CANCER OF THE PYLORUS IN A LIVING SKELETON.

The St. Louis *Globe-Democrat* of a recent date contains an account of a case of resection of the cancerous pylorus in a "living skeleton." The patient, Joseph N. Robinson, of New York, has exhibited himself as a "living skeleton" for twenty-eight years, and is now 53 years of age. About six weeks ago he went into the New York Hospital under the care of Dr. William T. Bull, on account of having become so weak that he had to be carried about, and then only with great pain. On account of his extreme emaciation, probably, he would sometimes lie unconscious from morning till night, and during the night would be hysterical and sleepless. His manager had noticed for some time that there was a tumor in the pyloric region, which could be easily felt on account of the extreme emaciation.

At the time of the operation, about three weeks ago, the patient was 6 feet 2 inches tall, had a waist measure of 14 inches, and weighed 72 pounds. The tumor proved to be a stricture of the pylorus, showing some evidence of cancerous growth (?), and "would scarcely admit a lead pencil." Complete resection of the pylorus was performed, an opening made in the anterior wall of the stomach, and the resected end of the duodenum adapted to this opening. Although the operation was long, but little blood was lost,

and the patient's condition was much better than had been expected. He had no fever, and his recovery was remarkably rapid. At the end of two weeks he felt better than he had for many years, and began to be ravenously hungry, but was allowed nothing heavier than peptonized milk and brandy. Since then he has entirely recovered and is gaining rapidly in flesh. He weighed 100 pounds two weeks after the operation.

"When the pathologist examined the stricture removed from Robinson he found an ordinary pin fast in the middle of the tumor. About this, as a center, ulceration had taken place, and the scars of these ulcers had caused the tumor and the stricture. When told of this circumstance Robinson recalled having swallowed the pin thirty years ago while holding it in his mouth."

The account of the case in the *Globe-Democrat*, is very interesting, and written in the usual happy style of the newspaper correspondent. We hope to see a report from a more careful pen.

EDITORIAL NOTES.

SCARLET FEVER at Palmyra, Wisconsin, has caused the schools of that place to be closed.

MALIGNANT DIPHTHERIA, according to recent reports, is prevalent in the neighborhood of Hawthorne, N. J.

HOG CHOLERA IN OHIO.—Local papers state that hog cholera prevails in Hancock Co., Ohio. In Portage township alone more than 6,000 hogs have died of the disease.

A CASE OF COCAINE POISONING has recently occurred in San Francisco. It seems that the sufferer took the drug without medical advice. The man was taken to a hospital, where he recovered.

A CASE OF SMALL-POX IN OMAHA seems to have aroused not only the Board of Health but the whole population of that city, and vigorous measures are being taken to prevent the spread of the disease.

YELLOW FEVER IN FLORIDA.—The yellow fever persistently continues to find new victims in Florida. November 12th thirty new cases were reported in Jacksonville and three deaths, making the whole number of cases reported to date 4511, and the total deaths 388. One new case was reported in Gainesville, Fla.

TRANSPLANTATION OF THE CORNEA.—On October 5 a little girl, aged 4 years, in Norristown, Pa., had the cornea of a rabbit transplanted in her eye. She was discharged from the Hospital on October 31, with favorable prospects for recovery.

THE McDOWELL MEDICAL SOCIETY met in Henderson, Ky., on November 2. About thirty members were present. Several papers were read and discussed. A grand banquet and hop was tendered the Society by the local members at the Barrett House. The Society will meet in Owensboro on May 3, 1889.

A PECULIAR DISEASE.—Bailey Walters, a prominent resident of Osage Township, Parsons Co., Kansas, died recently, in the 57th year of his age, with a peculiar malignant fever which is epidemic in that neighborhood. Within two months Mrs. Walters and two sons have died, and the remaining three members of the family are sick with the same disease. Last week James Smith and Geo. Mayes died, and four of the latter's family are sick with the fever.

CARCINOMATOUS ULCERATION OF THE AORTA was the cause of death on October 15 of a patient upon whom Dr. James Murphy performed gastrotomy for carcinomatous stricture of the œsophagus on September 9, 1887—the patient having lived 402 days. The immediate cause of death was hæmorrhage from the descending aorta, which had been ulcerated into by a carcinomatous mass.

THE "MARITIME MEDICAL NEWS" is the title of a new bimonthly journal printed at Halifax, N. S. The first number, for November, contains an address by Dr. P. R. Inches before the New Brunswick Medical Society, an address on the Nova Scotia medical act by Dr. William McKay, the report of a case of dilatation of the stomach, by Dr. Page, of Truro, and other interesting matter.

THE "UNIVERSITY MEDICAL MAGAZINE," the first two numbers of which (October and November, 1888) have been received, is edited under the auspices of the alumni and faculty of the University of Pennsylvania, and published by A. L. Hummel, of Philadelphia. The numbers at hand are filled with interesting papers, clinical memoranda, etc., and if merit is an indication of future success the *University Medical Magazine* will succeed.

EXTRALITE is the name of a new explosive, said to be twice as powerful as dynamite, and much safer to handle. It cannot be exploded in the open air, nor by concussion. It seems that it must be confined (tamped) and exploded by means of a fuse. Its safety should make it a popular explosive. The French Government is said to have paid one million francs for the right to use it. It is to be manufactured in this country in New Britain, Conn.

AN OPTICAL DELUSION.—The following is from the *Philadelphia Times* in regard to a young woman who has had one of her eyes replaced by a rabbit's eye, as it seems: "Miss Fisher told a reporter for the *Times* that she could see out of the right eye nearly as well as ever, and that she read quite well with it. Closing the right eye and looking with the rabbit eye, she said she could see to move about the room without stumbling over anything, and she could also count her fingers. At the reporter's request she removed her glasses, and then closing her right eye she was able to describe the movement of the reporter's hand, and in other ways show that, while the sight in the 'rabbit' eye is imperfect and limited, she can see with it." Perhaps, however, it was a case of transplantation of the cornea.

GETTING AHEAD OF DISEASE.—DR. P. R. INCHES, in a recent address before the New Brunswick Medical Society, instanced the city of Edinburgh as showing the benefits resulting from the intelligent use of sanitary and preventive measures. In 1862 the population of that city was 170,000, the deaths 4,661. In 1886 the population was 211,400, but the deaths were only 4,149—a fall of death-rate from 26.65 to 19.62 per 1,000; and the change took place mainly in the diseases most influenced by sanitary precautions—the zymotic class. In 1862 that group accounted for 19.73 per cent. of the total deaths, but in 1886 for 8.34 per cent. only, and this change represents a continuous fall in the percentage. In some of the poorer and over-crowded districts of the city there was a decrease of mortality varying from 3.77 to 20.71 per 1,000. Such diminution of mortality implies an immense saving of life, and is attributed by the authorities to relief from over-crowding, to the opening of new streets and breathing places, better water-supply, new drainage, improved plumbing, and to the system of

notification of infectious diseases, and the isolation and removal of the infected, and disinfection of the place.

OBJECT TO A LICENSE TAX.—It seems that the City Council of Salt Lake City have imposed a license tax upon physicians. At a meeting of the Salt Lake Medical Society, held on October 30, the following communication was passed and sent to the City Council :

At a regular meeting of the Salt Lake Medical Society the action of your honorable body relative to licensing the practice of medicine in this city was discussed. The result of this discussion was, that the present committee was appointed to wait upon the City Council and ask for a reconsideration, for the following reasons :

1. That a license imposed upon one of the liberal professions is unusual, and especially out of place as imposed in the medical profession, because physicians, as a rule, attend to the poor of the city in charity, and do a great deal of work without recompense.

2. If the object of the license is to raise the standard of the medical practice, thereby protecting those in the community incapable of judging the merits of a physician as against the illegitimate practice of medicine, we think the ordinance fails to meet such ends for these reasons: The class of medical men known as quacks draw about themselves a following, which pays them enormous fees, so that they are better able to pay a tax than the honest, conscientious, regular medical man. The quack pays his tax, does his business, the community is not protected, and the standard of the medical practice is not raised.

We would add that the medical society is heartily in accord with any movement which will raise the standard of medical practice in this city, and which will exclude those men known as quacks, and to effect this result we would suggest to your honorable body that such methods be adopted as are found in other communities, as the establishment of an examining board to investigate the merits of all wishing to practice medicine, which will grant certificates of recommendation for license—the fee being a nominal sum. We would respectfully ask your consideration of the above, and that your honorable body will repeal the tax which appears so unusual.

SOCIETY PROCEEDINGS.

Medical Society of Virginia.

Nineteenth Annual Session, held at Norfolk, Virginia, Oct 23, 24, and 25, 1888.

TUESDAY, OCTOBER 23—FIRST DAY.

The Nineteenth Annual Session of the Medical Society of Virginia convened in the Hall of the Young Men's Christian Association, Norfolk, Va., Tuesday, October 23, 1888, at 7:30 P.M., THE PRESIDENT, DR. BENJAMIN BLACKFORD, of Lynchburg, Va., in the chair, and Dr. Landon B. Edwards, of Richmond, Va., Recording Secretary. The Hall (capacity about 400 seats) was well filled—a number of ladies and gentlemen not Fellows of the Society being in the audience. About 180 Fellows in all were registered as in attendance during the session—the largest number ever in attendance upon any session of the Society. In addition, Dr. John B. Hamilton, Sup. Surg. Gen. of the U. S. Mar. Hospital Service, of Washington, D. C., and Dr. Milton Josiah Roberts, of New York City, were present as invited guests.

After prayer, DR. HERBERT M. NASH, of Norfolk City, delivered a most cordial *Address of Welcome* on the part of the professions of the "twin cities" of Norfolk and Portsmouth.

DR. WILLIAM T. WALKER, of Lynchburg, was then introduced by the President, and delivered the *Annual Address to the Public and Profession*, announcing as his subject :

MOSES AND OTHER DOCTORS.

Dr. Walker stated that the hygienic laws of Moses have no practically adopted equals to this day. His march of 2,500,000 people for forty years through the arid desert, all the while observing a system of hygiene such as has never been known in the records of time, was marvelous. The most thorough cleanliness in all things was required of each person. Chlorine preparations are among the best germicides known today; and yet Moses anticipated this latter day discovery by requiring the preservation of meats, etc., by the use of chloride of sodium. He taught how to disinfect buildings after leprosy had infected them, or, if they could not be purified to destroy them by fire. His laws in regard to the marital relation are perfection. If our women were to follow the special laws laid down by Moses for their health, their would be but little need for gynecologists. It is claimed that *preventive medicine* must be the medicine of the future; but Dr. Walker proves from the records of Moses and those who followed him, that it was the medicine of the past. It is a striking fact in history that, while the other learned nations of

those ancient days had their high grade schools of medical learning, the Jews had none, for they did not need them so long as they observed the laws of Moses. Passing references were made to the medical records of Hippocrates, of Celsus, of Galen, etc., down to the time of the Great Physician, who came not to destroy the laws of Moses, but to fulfil them. Luke, the "beloved physician," was a scholar of the highest culture and a faithful friend to Paul in prison while it was a danger to himself to be such—illustrating that the true doctor does not flee when danger approaches. Touching allusions were made to the faithful doctors of Norfolk of 1855 when the terrible epidemic of yellow fever swept that city. Tributes were likewise paid to those doctors of Jacksonville and other places who, this year, are sacrificing their lives for the safety of the people. Credit is awarded to the late Dr. Crawford W. Long, of Athens, Ga., as the discoverer of modern surgical anæsthesia by ether. A eulogy is likewise passed upon the immortal Dr. J. Marion Sims. References were made to others who have taken up and further perfected the life work of these great men.

SIXTY-NINE NEW FELLOWS.

The committee on nominations recommended the applications of sixty-nine doctors, who were duly elected Fellows of the Society during the session.

WEDNESDAY, OCTOBER 24—SECOND DAY.

THE PRESIDENT called the Society to order at 10 A.M.

The Recording Secretary presented his report, which showed that during the year just ended, thirteen Fellows had died, and two had resigned Fellowship because of removal of residence from Virginia.

The *Executive Committee* (Dr. W. W. Parker, of Richmond, Va., Chairman,) reported that Dr. James Parrish, of Portsmouth, had been duly nominated to the Governor of Virginia for commission to fill the vacancy on the Medical Examining Board of Virginia caused by the resignation of Dr. L. Lankford, now of Norfolk, Va., which nomination was confirmed by the Governor.

The constitution of the Society was so amended as to permit parties—always of the white race understood—to become Fellows of the Society who had secured certificates of satisfactory examination for license to practice in Virginia, whether graduates of medical colleges or not.

DR. THOMAS J. MOORE, of Richmond, presented the report of the committee appointed by the joint committees of the Medical Examining Board of Virginia, and the Medical Society of Virginia, during its last annual session, to petition the Legislature of Virginia to

AMEND THE EXISTING LAW.

The Committee succeeded in securing amendments in the two important particulars as follows:

1. Requiring all applicants for license to practice medicine in Virginia to stand satisfactory examinations before the Medical Examining Board of Virginia *in session*; or

2. In exceptional instances, for sufficient reasons, to be decided upon as such by the President of the Board, applicants may be granted permission to stand examinations before a Committee of three members of the Board—the Committee to hold the examinations *only in a session*, and not individually as formerly.

The special order of business at 11 o'clock of the morning of the second day's session being the "Annual Address of the President," and that hour having arrived, DR. BENJ. BLACKFORD read a well prepared address on *The Progress of Medical Education, and the Importance of the Study of the Physical Sciences in Relation Thereto, during School Life*. This address will be published in the volume of the Society's *Transactions*.

The subject for general discussion was next called for:

ATYPICAL FORMS OF TYPHOID FEVER.

The appointed Leader, DR. WILLIAM C. DABNEY, Professor of Practice of Medicine in the University of Virginia, opened the discussion by reading a paper on the subject. He took the ground that the disease had become distinctly milder of late years, and that the symptoms, such as diarrhœa, eruption, and the *gradual* rise of temperature which were formerly considered characteristic, are now often absent. That these cases are nevertheless cases of genuine typhoid fever, he considered proven by the following well established facts:

- (a) The cases usually present some of the peculiar characteristics of the disease.

- (b) Hæmorrhage from the bowels occasionally occurs in these cases.

- (c) The intestinal lesions characteristic of typhoid fever have been found on post-mortem examination.

- (d) These mild or atypical cases are capable of originating epidemics of typhoid character.

The conclusions arrived at by Dr. Dabney are thus stated:

1. The disease in this country is gradually becoming milder, and symptoms which were formerly thought to be characteristic and almost invariable are now much less frequently present.

2. The diagnosis of the disease is often attended with extreme difficulty, and in the early stages is generally impossible.

3. In those cases which are apparently extremely mild, dangerous symptoms may arise suddenly, and a fatal issue may ensue from errors in diet or other imprudence.

4. In all doubtful cases precautions should be taken to prevent the spread of the infective principle or germ, and to guard the patient against danger from imprudence.

5. The dangers to be especially apprehended in these cases are exhausting diarrhoea, hæmorrhage, and perforation of the bowel.

6. In view of these dangers, patients should be placed upon liquid diet; should be confined to bed; and constipation, when present, should be relieved by enemata, and not by purgatives, even of the mildest character.

DR. JOHN HERBERT CLAIBORNE, of Petersburg, said that the first point is the selection of a common ground upon which contestants may stand. In other words, a mutual but definite understanding of what each may mean by the term typhoid fever. The subject proposed—"Atypical Forms of Typhoid Fever"—supposes, of course, that there are "typical forms." What are these? By the expression *typical* he thinks we all agree that *representation* is meant—and a typical case of typhoid fever is understood to be a representative case. Now, what are the symptoms that *characterize a representative, or typical case*? In its generic or derivative sense, we should say that a typical case of typhoid fever should show at sometime during its course symptoms of stupor, or at least, of dulness or hebetude of mind. There should also be noted a diarrhoea of peculiar form—that there should be a pathognomonic rose-colored eruption on or about the 14th day of the disease—that there should be epistaxis—ordinarily slight. We should say, again, that the fever was self-limited; that it was, perhaps, mildly infectious; that it oftener attacked adolescents; that it had its own recognized microbe; and that above all others necropsy should develop, distinctly and unquestionably infiltration and ulceration of the glands of Peyer. We might add to these general symptoms, slight bronchitis, gurgling in the right iliac fossa, headache, anorexia, tawny flesh of the cheek, and a temperature steadily and progressively rising and subsiding.

The question then arises, how many and which of these symptoms can we eliminate from a *typical* case in order to render it *atypical*? In other words, if typhoid fever be a disease marked by certain pathognomonic symptoms and pathological lesions, how many or what symptoms or lesions can we take out and still leave the disease an entity—a recognizable unit? And, if we are not in danger of multiplying words, are we not in danger of multiplying diseases to the confusion of diagnosis?

There is a fever, a summer and autumnal fever, common to many sections of Virginia which it has become fashionable to note as *typho-malarial fever*—a term that originated during the late war between the States, and for which the late Dr. Woodward of the United States Army was per-

haps responsible. At least he contended that it was a substantive fever, with its own symptoms and its own pathological lesions, and though he subsequently confessed that he was mistaken and recanted at the International Congress of Physicians, in Philadelphia, ten years later, the name has never perished. Wherever there is malaria now—and that seems ubiquitous—there we have typho-malarial fever. Dr. Cutter has published in parallel lines a differential diagnosis between typhoid fever and typho-malarial fever, which throws great light on this subject, and places the latter where, of right it belongs, viz., in the class of *ordinary bilious remittent fever*. Any fever, or any disease, may assume under certain unsanitary or depressing influences, a typhoidal character; but that does not constitute the peculiar intestinal, enteric, or typhoid fever to which we were introduced in our student days by Lewis, or Gerhard, or Wood; nor can we think that there is any blending of type in the two forms—any swapping or coincident or concurrent cultivation of the microbes peculiar to each. And in the treatment of these so-called typho-malarial fevers, the early, honest, and judicious administration of quinine will ordinarily cut short the attacks. He has rarely seen one of these hybrid fevers run into a typhoid condition unless there was delay in the exhibition of the great antiperiodic, or it were given in pills or capsules and, per consequence, undigested, or unless there was present some real or imagined idiosyncrasy preventing the use of this agent. When the fever persists in spite of this treatment you may suspect the correctness of your diagnosis, or know that there is some local cause of irritation apart from malaria. In his experience, a mild mercurial every night, guarded or not with some preparation of opium, according to the condition of the bowels, and from twenty to thirty grains of quinia at the period of remission, with fifteen grains of antifebrin, or thirty grains of antipyrin during the period of exacerbation, in three equally divided doses, will ordinarily cut short the fever in from three to eight days.

DR. W. G. ROGERS, of Charlottesville, presented a paper tending to strengthen the evidence already existing that *drinking water polluted by sewage* is a most fruitful source of typhoid fever. Previous to the establishment of the Charlottesville Water-works by which pure mountain water is now supplied to the city there was much typhoid fever. Then his place was supplied with well water contaminated by surface drainage, etc. But now typhoid fever is comparatively rare, and the cause of the few cases that are occurring is traceable to the fact that the parties use well water. Of the total of fifteen cases of this disease seen by him within the past two months, all were users of well water, which wells were plainly the receptacles of contaminated surface drainage. As illustrative of *atypical* forms of typhoid fever seen

by him, he mentions one with very slow pulse in a boy 10 years old. He also had all the usual signs and symptoms of typhoid fever except fever itself. His pulse varied from 48 to 50 for three weeks; and during the same period of depressed pulse, especially during the evenings, his temperature was subnormal—varying from 96° to 98° F. He reported also two slow-pulse cases, occurring in sisters, aged 12 and 14 years, respectively, sick at the same time; but the other prominent symptoms of typhoid fever were wanting, and the disease was definitely diagnosed simply by the fact that four typical cases were present in the same house at the same time—all due to the one cause of drinking contaminated well water. One slowly improved and was convalescent in two months; the other sister died from asthenia at the end of the fourth week. Autopsy revealed deep ulcers of the ileum, but no perforations. These girls developed a disposition to sing throughout the disease—a disposition not before developed. He reported another case, in a girl 17 years old, in which the average morning temperature (106° F.) was higher than the evening (104° F.). She apparently passed into a comatose stage several times, from which she was relieved by stimulants—an odd fact in itself. He also reported a uræmic case relieved by jaborandi.

DR. THOMAS J. MOORE, of Richmond, asked Dr. Dabney if he recognized such a fever as typho-malarial? The reply was, Yes, but he thought it was the product of two diseases in the system at the same time.

DR. S. K. JACKSON, of Norfolk, read a paper relating to some points in the

TREATMENT OF TYPHOID FEVER BY THE SALTS OF AMMONIUM.

(See THE JOURNAL of Nov. 24.)

DR. LEWIS G. PEDIGO, of Roanoke, stated that he has found great difficulty in diagnosing some cases of fever recently occurring in his section; but they were finally recognized as atypical forms of typhoid fever—the peculiarity consisting chiefly in the high temperature from the very commencement of the attack. It was the form of cardiac typhoid fever spoken of in some of the books, in which there was early failure of the heart. There was great difficulty in controlling the temperature throughout the attack, especially during the latter stages, and the disease ran a very rapid and generally fatal course. The difficulty of differential diagnosis was chiefly between cardiac typhoid fever and a type of continued malarial fever occurring in some localities, mostly about the mountain regions. Even in these malarial types, as also in typhoid fever, quinia does harm. It certainly should not be given in larger quantities than about 5 grs. in twenty-four hours. From the onset to the decadence of the fever, muriatic acid should be given in repeated doses each

day. Antipyrin is also useful, and when he associates the acid with antipyrin, he thinks he has made the best therapeutic combination.

DR. JOHN H. NEFF, of Harrisburg, said that he could confirm what had been so well expressed by Dr. Dabney, though his fields of observation were different. During the past summer he has seen many cases of atypical typhoid fever like those described by Dr. Dabney. There was some difference of opinion expressed in his vicinity as to the nature of these cases—one observer holding that they were malarial. He did not believe there was a malarial miasm in Harrisburg. Early recognition of these cases was very important. Treatment consisted in absolute rest and diet; individualizing each case. He thought typho-malarial fever a misnomer. We might as well say pneumonia-malarial, dysentery-malarial, etc. Environment modified all diseases. He could not endorse Dr. Jackson's ammonia treatment, and did not believe in any specific for the disease.

In answer to a question by Dr. S. K. Jackson, Dr. Neff stated that he had been using the nitrate of ammonia treatment, etc., advocated by Dr. Jackson, for a few months—sufficiently long to persuade him not to depend upon it in the future.

THURSDAY—EVENING SESSION.

DR. C. T. LEWIS, of Clifton Forge, read a paper devoted principally to a

NEW TREATMENT OF TYPHOID FEVER.

He thinks if he can keep the secretion of bile anywhere near its normal quantity and condition, the disease will run a mild and favorable course, because the bile will destroy, or prevent the germs of typhoid fever from finding lodgment in the intestinal canal, or will remove or destroy them if reached. Mercury in some form is about the best and the most commonly used cholagogue. Mercuric chloride is especially recommended on the ground that it neutralizes the toxic product of the disease germs, without destroying the animals themselves, and acts most decidedly upon the liver as a cholagogue. The bile flows into the bowel and acts as a germicide and antiseptic. But after awhile, the continuous use of mercury brings out its own poisonous effects upon the human system, depressing especially the nervous forces, so as finally to bring about a typhoidal condition. It may even cause diphtheritic ulcerations of the intestines, upon which podophyllin, rhubarb, jalap, euonymin, etc., produce a uniform bile secretion, but they irritate the bowels—they are purgatives as well as cholagogues. Ox-bile—theoretically suggested as the correct drug—has been practically tried, but failed to accomplish what was wanted of it. After careful consideration of all the facts, Dr. Lewis now adopts the following plan of treatment: At intervals of two

hours give three doses, but not more, of a powder composed of 2 grs. of calomel and 1 of rhubarb. After this, throughout the whole course of the disease, night and day, give 10 drops of dilute nitro-muriatic acid in a wine-glass of water every two hours. Also give a quarter-glass of fresh milk every three hours, night and day. If the acid and milk come at the same hour, give the acid first, as it gets out of the stomach sooner than the milk. If the patient becomes restless at night, give 2 grains of Dover's powder every two hours, beginning about 2 o'clock in the afternoon, until four doses, and no more, are administered. If the fever rises above 103° bathe the shoulders, upper part of the chest, neck and arms, in cold water every twenty minutes, with a basin of cold water by each side of the patient for his hands to play in; and cloths wet with the same cold water are laid around the neck and on the bowels. The result of this plan is that of 180 cases so treated by Dr. Lewis, only four deaths have occurred, and these deaths were the results of preventable causes by the patients themselves. Be careful not to allow solid food until the patient is well convalescent.

DR. ALBAN S. PAYNE, of Markham, totally differed with Dr. Lewis. The old treatment of Dr. George B. Wood was the best. If Peyer's patches were ulcerated, nitro-muriatic acid would do them injury as an irritant in such a fever.

DR. GEORGE T. WALKER, of Vinton, asked if it was a sufficient length of time to allow two days after the fever leaves before letting the patient take any solid food? Dr. Lewis replied that two days was ordinarily long enough. Then he begins by giving a small Irish potato and a little light bread.

DR. WM. W. PARKER, of Richmond, gives a little chicken soup as soon as possible. It is easily digested and is nutritious, and is not irritant to the inflamed ileo-cæcal region of the bowels.

DR. GEORGE E. WILEY, of Abingdon, asked Dr. Lewis if he ever gave any antipyretics during the course of the fever? Dr. Lewis answered that he did not, except the cold water baths, to which he had referred.

DR. J. H. NEFF, of Harrisonburg, said that he had no faith in any routine treatment of typhoid fever. Early diagnosis is most important. In many cases, absolute rest, both mental and physical, absolute diet, proper surroundings, with good nursing, etc., will lead to recovery. Each case must be individualized and treated according to its symptoms. Some patients cannot take milk. In such cases, he gives chicken and beef soup. Antipyrin, antifebrin, quinine, etc., often ameliorate the symptoms, according to his experience. Morphia often acts well in inducing sleep, easing pain and lowering temperature. Observation shows that quinine is still a good anti-

pyretic—especially in the afternoon—and in many cases does not irritate the stomach, or depress the system, like antipyrin and antifebrin. Opium is often also a splendid antipyretic. But sponging the body with cold water, often repeated, allows us generally to dispense with antipyretics. Aperients are not indicated in any stage; he relies upon enemata to relieve constipation. The mortality of this disease is greatest between the ages of 20 and 30 years. When hæmorrhage from the bowels occurs, he gives opium and enjoins perfect rest.

DR. HENRY M. PATTERSON, of Stannton, spoke of the atypical form of typhoid fever, which starts off with *high* fever and headache. In such cases, we must give some such remedy as antipyrin. Quinine also acts well in these cases. If, however, the sudden onset of high fever and headache spoken of is followed by a chill, the case is not one of typhoid fever, but is a continued fever of another kind. In regular or typical cases of typhoid fever, he has had good effects from aconite as an antipyretic.

DR. WILLIAM L. ROBINSON, of Danville, stated that typhoid fever varied in different sections, being modified by malaria and hygienic surroundings. An uncomplicated case of typhoid fever commencing with general malaise, moderate fever, dry tongue, quick, corded pulse, gradually increasing temperature, reaching its acme at the end of the second or third week, subsultus, tympanites, tenderness in the right iliac region, hot dry skin, delirium, etc., requires conservative management, such as moderate quantities of liquid diet, avoiding that excess which fails of digestion, and produces fermentation and diarrhoea. Turpentine is a diffusive stimulant and antiferment, as is carbolic acid, in connection with tincture of iodine. High temperature produces changes in the blood and parenchymatous degenerations, which weaken the muscular power of the heart. Antipyrin in moderate doses quiets the nervous system, reduces temperature and does much less harm than continued high temperature. The rectal use of digitalis, opium and whisky well sustains the flagging circulation. The use of alcohol in fevers, as recommended by Dr. Flint, in his paper before the International Medical Congress, he fully endorses. He believed in guarding the stomach and guiding the patient through the attack. He could not concur with Dr. Lewis in the use of ten drops of nitro-muriatic acid every two hours, and a quarter of a glass of milk, because it would, in such quantities, produce irritation of the alimentary canal and coagulate the milk, and cause fermentation and gas.

In reply to the criticism, he stated that while nitro-muriatic acid in proper proportions, aided digestion of milk, yet, in the quantities suggested by Dr. Lewis, it would produce results first claimed. He stated further, that the patholog-

ical condition of the alimentary canal in typhoid fever implied ulcerative and inflammatory conditions, and it was a well known fact that, even in ordinary ulceration of the stomach, an absolute alkaline condition offered the only redress. He therefore concluded that such an amount of acid as was suggested, was irrational. He urged upon the Society to be slow in accepting the statistics of a limited number of cases as proof of the efficacy of any line of treatment, for the epidemic might have been, and most probably was, of a mild type, and needed little treatment of any kind. He believed that ten drops of nitromuriatic acid every two hours, and a quarter glass of sweet milk, would, if persistently used, put any healthy man in bed in forty-eight hours. He had not heard the paper and discussion, prior to his coming in the room, but he was convinced that that form of fever which presented excessive high temperature in the beginning, clean tongue, a pulse not exceeding 100 a minute, good digestion, no diarrhoea or tympanites, etc., would be materially modified by quinine, because malaria was the complication.

DR. HUGH T. NELSON, of Charlottesville, said that he had received his medical education in Piedmont, Virginia. At that time typhoid fever was considered *the fever* of the section; and upon settling in a section of the State, in which malarial diseases were of frequent occurrence, he frequently thought he saw cases of typhoid or enteric fever; and subsequently, upon removing to Charlottesville, he had seen a good many cases of continued fever, some of which resembled the cases he had seen in the Lower Country; while other cases differed from it in many particulars. The important point was to decide in any given case of continued fever, whether or not he had present a disease, which had its starting point in *irritation*, and subsequent inflammation of the intestinal glands. Unless this point could be determined, there was no certainty that we had typhoid fever. Hæmorrhage from the bowels occurred by passing congestion in cases of fever in which, though the interval glands showed congestion also, there was no ulceration, and no actual acute inflammatory condition. In another class of continued fever, the hæmorrhage, when occurring, occurred by an acute inflammatory process, which destroyed the previously much enlarged intestinal glands and the blood-vessels supplying them—the general mucous surface of the bowel remaining intact, or else only showing slight *active* congestion, evidently secondary to that occurring in the glands. He believed this to be the characteristic form of hæmorrhage in typhoid fever. These were certainly *typical* cases of this typhoid or enteric fever; but many cases are no doubt put in the category of typhoid fever which do not properly belong there. The importance of a differential

diagnosis cannot be overestimated in the study of continued fevers, so that proper treatment may be instituted.

DR. LEWIS G. PEDIGO, of Roanoke, objected to certain doctrines laid down by Dr. Robinson. The great effort now being made to arrive at a specific treatment of typhoid fever will finally bring about a tangible result. The trend of medical thought and medical practice in this connection is toward the chlorine group. He believes that the proper use of some member of this group of germicides will ultimately furnish the key to the solution of the great problem. He criticized Dr. Robinson's objection to the acid treatment by suggesting that muriatic acid as an important agent in the process of digestion; and so far from aggravating the already existing irritation of the alimentary canal, it has a tendency to relieve such irritation by *preventing* fermentation, which produces the irritating agents.

DR. C. T. LEWIS does not believe that nitric acid prevents putrefaction.

DR. L. B. ANDERSON, of Norfolk, stated that all the speakers had seemed to assume that bacteria are pathological factors, whereas they never have been, and never can be such. They are of vegetable and not animal origin. He has never seen any signs of life in any vegetable or animal matter, or laudable pus from anthrax, furuncle, abscess, or gonorrhœa, until it has been exposed to the air under suitable temperature—until, in short, fermentation or putrefaction had developed. Bacteria, therefore, are a product, and not a cause of fermentation or putrefaction. We should rather look upon bacteria as the best friends the doctor has for preserving health.

(To be concluded.)

Medical Society of the District of Columbia.

Stated Meeting May 23, 1888.

CHARLES E. HAGNER, M.D., VICE-PRESIDENT,
IN THE CHAIR.

DR. G. WYTHE COOK presented the specimen and read the history of a case of

CANCER OF THE INTESTINE.

(See page 699).

DR. BUSEY: The specimen presented by Dr. Cook is very interesting and presents unusual conditions for a malignant growth. It looked like a cyst that had sprung from the uterus. He moved its reference to the Microscopical Committee. Carried.

DR. H. L. E. JOHNSON presented the specimen and read the history of a case of

FIBROID POLYPUS OF THE UTERUS.

History.—Mrs. T., white, æt. 33, four children

and no miscarriage. Last child delivered by me two and a half years ago; labor normal. Has always been healthy. Menses normal, lasting seven or eight days. Has complained of no special symptom till about five months ago, when she noticed an excessive leucorrhœal discharge, which increased steadily in amount and became more offensive till the odor could be noticed anywhere about the house. She had weakness, nervousness and backache.

Examination showed vagina filled and distended with a decomposing soft mass about the size of a foetal head, breaking down under the least pressure. Its point of attachment could not at the time be made out. After removing the vaginal portion by forceps the vaginal walls were found to be covered here and there by large ulcerated patches caused by pressure, and the cervix was covered with granulations which would bleed on the slightest pressure. It looked like a malignant carcinomatous condition. The sound passed 7 inches into the uterus. The mass was found to be attached principally at fundus uteri, and at points in cervical canal.

On May 7 the patient was anæsthetized by Dr. D. K. Shute, and being assisted by Dr. James T. Young, I dilated the cervix (cervical attachment having been separated before) and passed the ecraseur as far as the fundus and around the growth separating it. Applied tincture of iodine (Churchill) to uterine cavity. No hæmorrhage followed; nor pains, nor soreness. Required no further treatment. Patient up on eighth day, well. Vagina and uterus normal. It is interesting and peculiar, as there was no hæmorrhage nor menorrhagia, and that so large a decomposed mass produced no septic symptoms. After separating the cervical attachment of the growth septic symptoms developed from absorption through denuded healthy surfaces. These were relieved by antiseptic injections and the application of a saturated solution of chromic acid.

DR. REYBURN: To what did Dr. Johnson attribute the septic symptoms after operative interference?

DR. JOHNSON: It resulted from the breaking down of the attachments to the cervix.

DR. SAMUEL C. BUSEY read a paper on

NEURALGIA OF THE LINGUAL BRANCH OF THE RIGHT TRI-FACIAL NERVE.

(See page 697).

DR. J. TABER JOHNSON: Was electricity tried in Dr. Busey's case?

DR. BUSEY: It was suggested, but the patient was unwilling to try it.

DR. A. F. A. KING: The attacks started after reading aloud for some time. The woman was not accustomed to it and this would be an unusual use of the tongue for one 57 years old. This evidence was corroborated by the fact that talking

and masticating produced pain. What remedies had been used? Was she anæmic?

DR. BUSEY: The patient stated she had taken large quantities of quinia and other drugs; had been salivated; her face and jaw had been blistered; anodynes of every description had been used locally and hypodermatically; and she had grown worse all the time. She was not anæmic, but in good health. Mastication was interrupted, and she had to be very particular with her dietary. She could not eat bread and potatoes. After reading aloud for three or four weeks the first attack began and the paroxysms recurred at intervals until spring. These attacks recurred annually for seven years, at the beginning of winter. The summer of 1887 was spent in the North; she came here in November, and soon after went into a greenhouse and the paroxysm suddenly came on. She had derived comparative ease from small doses of morphia, but was not cured.

DR. SCHÆFER: Had suffered from tri-facial neuralgia caused by a carious tooth. He found that if he neglected his food the exacerbations were worse and the paroxysms lasted longer. He had advised systematic feeding and keeping the stomach full. This seemed to assist the remedies and have a beneficial effect. He had found the same experience with the temperature; they appeared in October and disappeared with the coming of spring. No two cases of neuralgia are alike. He derived great benefit from 2 grs. of opium, 10 grs. of quinia and 2 ozs. of whisky.

DR. REYBURN: Had had a patient under his care for neuralgia of the scalp, caused by cutting the hair very short. He was benefited but was subject to attacks afterwards. He was relieved by potassium iodide and cod liver oil. Had no evidence of syphilis. Dr. Busey's case might have been benefited by surgical treatment.

DR. J. FORD THOMPSON: In all such cases where medical treatment fails it is well to try surgical. To treat neuralgia of the lingual nerve surgically can only be practiced on the anterior part of the tongue where it is very superficial. The nerve might be cut on the side of the tongue and the neuralgia relieved, but such a procedure would be impracticable posteriorly, where the nerve is very deep. He then gave the histories of two very interesting cases of neuralgia of the tri-facial nerve, where operation had afforded some relief. In one he had cut the nerve at its exit from the foramen rotundum, and he had had relief for a year, but now wanted to be operated on again. But Dr. Thompson did not know what to operate on. He had tried electricity, but the patient was made very much worse. If he could locate a painful nerve he would operate. This is about the history of a great many cases of tri-facial neuralgia. He could only find recorded two successful operations.

DR. SOUTHWORTH called attention to the value of

antipyrin in the treatment of neuralgia. He had treated several cases successfully with it in combination with morphia and quinia.

DR. HOWARD mentioned a case recorded in Sir Charles Bell's Memoirs. A child was treated for neuralgia with the usual methods then in vogue, and given up. Bell found green matter running out of its mouth, and found an abscess in front of the ganglion of Gasser.

DR. BUSEY: The history would exclude any local cause. He had considered the propriety of the operation referred to by Dr. Thompson, but had concluded it was impracticable, because these and, perhaps, other nerves were involved. He thought it probable that a better result might be obtained if the treatment tried during the past winter could be begun early and faithfully carried out. He had not supposed that the general subject of facial neuralgia would have been discussed, but had hoped that the peculiarities of the reported case would have commanded the attention of the members.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Neurasthenia; its Differentiation and Treatment.

At the first meeting of the season of the Section on Practice of the Academy of Medicine there was an animated discussion on the much vexed subject of neurasthenia, which was introduced by Dr. Landon Carter Gray in an elaborate paper entitled:

"Neurasthenia; Its Differentiation and Treatment." Dr. Gray first directed attention to the fact that functional nervous diseases are largely disregarded by the general practitioner because of the modern development of the study of them, although the need of their proper classification was widely felt, especially by neurological specialists. For this reason it was that the writings of the late Dr. Geo. M. Beard had had such a success in Germany. Dr. Gray did not believe that properly so-called neurasthenia was as prevalent as the followers of Beard would have us believe. He stated that, in his opinion, there were three forms of neurasthenia: the reflex, the lithæmic and the simple. The reflex form was due to vicious habits and reflexes from non-nervous organs, the lithæmic was due to the condition known as lithæmia, and the simple form was that in which there was true nervous prostration. The points of differential diagnosis of these various forms were then dwelt upon. But, he said, neurasthenia was also to be differentiated from a number of nervous diseases, especially the early stages of the latter, such as the morbid fears (for which Dr. Gray suggested

the name of functional insanity), and which really belonged to the insane diseases and were often associated with them; melancholia, especially the mild cases, in which suicide was often committed; the early stages of mild chronic forms of insanity; neurotic conditions in which the individual is subject to migraine, hysteria, angina pectoris or anginoid attacks; the early stages of general paresis of the insane or of locomotor ataxia; and a peculiar disease described a year ago by Dr. Hughes Bennett, and called by him muscular hypertonicity, in which the symptoms are those of weakness and exaggerated reflexes of the lower extremities.

The prognosis of these different forms was variable, depending upon the severity of the reflex cause when present, and the possibility of thorough treatment. The treatment of the reflex form was the removal of the cause, if possible. The lithæmic form was to be treated by moderate laxatives, dilute nitro-muriatic acid and, if the nervous symptoms were severe, by rest. In any event, rest was a most important adjuvant, and should be proportioned to the needs of each particular case; it being better to have rather too much of it than too little. The diet should be regulated to a moderate degree by the entire withdrawal of either starchy or nitrogenous material for a short time, and then by the cutting down of the starchy material permanently by at least 50 per cent. In hot weather it was sometimes advisable to cut off the nitrogenous material for several weeks; and a complete change of air was often of the greatest benefit.

In the true cases of neurasthenia the best treatment was that advocated by Dr. Weir Mitchell, of rest, forced alimentation, massage and Faradism. Large doses of iron and malt extract should also be given in this treatment, the great difficulty with which was, however, that patients are apt to be disappointed at the loss of their muscular strength upon first getting out of bed. It should be explained to them that this would gradually return; but great care was necessary with many patients at this period to prevent them from losing the flesh and red blood that had been gained. Galvanism was an agent of great value in all these forms of neurasthenia, and it should be used as early as possible, except when the case is to be put to bed. It should be applied by means of large sponges, one at the nape of the neck and the other on the dorsal spine, 5 to 15 milliamperes of electricity being used, and the sittings continued every day for from three to five minutes. Massage was an uncertain remedy, often irritating the patient, and was only to be used in connection with the rest treatment mentioned.

Dr. W. R. Birdsall thought that we must unquestionably admit a neurasthenic element in disease; yet at the same time, when we attempted to apply it to a group of symptoms, we found that

it often failed. In many individuals the nervous tendencies predominated as a result of hereditary influence, and it seemed to him that the great danger was in assuming that we had a congenital neurasthenic condition, when the symptoms were in reality due to local causes or merely temporary conditions. The class of cases which Dr. Gray called the lithæmic would probably comprise the greater number of these, and it was important that they should not be treated on the basis of an unstable or defective hereditary nervous system. If we were to use the term neurasthenia at all, then, he thought we should confine it to the class of individuals who suffer from inherited defective nervous systems, and with the proviso that it was understood to comprise a group of symptoms which might belong to various conditions.

Dr. Gray had stated, he went on to say, that in the class of reflex cases all that was necessary to do was to remove the cause. There was often, however, an acquired condition, the result of reflex irritation, in which the whole nervous system was at fault. The removal of a local cause, whether about the eye, the nasal cavity, or elsewhere, was not always sufficient. In many cases we were still obliged to treat the individual for other neurasthenic symptoms cropping out in different forms.

In lithæmic cases the question of rest or of exertion for the patient was one which he thought must be specially determined in each individual case. In many instances increased activity of a kind entirely different from that to which the patient had been accustomed constituted the most satisfactory means of treatment; and he knew of nothing so good as moderate mountain climbing with a pleasant companion, especially if there were any hypochondriacal elements in the case.

Dr. Wm. H. Thomson said that the term neurasthenia was, no doubt, a very impressive one to use sometimes to patients, but otherwise he abominated it. It ought to be placed, he thought, on the same level as tonic, a word that led to more bad practice than any other in medicine, since remedies which acted in all sorts of different ways were all called tonics. When a patient came to him affected with nervous debility without appreciable organic disease, he said he always put to himself the question whether the individual were not suffering from one of four causes, viz.: virtual starvation; over-strain; some unnatural drain on the system; self-poisoning. Those who were the subjects of virtual starvation (usually females), it would be found, ate no breakfast to speak of, and probably took for their other meals principally tea, bread and sweets. They did not get sufficient nourishment to maintain their respiration and circulation; and the rest cure was therefore the best for them. In the second class rest and food were also required, and oftentimes a change of surroundings. In the third class the

drain, whatever it was, should be checked if it could, and the patient would then get well. The fourth class, that of self-poisoning, was the most common of all, and it was well illustrated by a case that had recently been under his care. A gentleman came to him suffering from cloudy mind in the daytime and insomnia at night, and he was completely relieved by means of bismuth, columbo and naphthalin. Another similar case was also successfully treated with intestinal antiseptics.

It was only very recently, Dr. Thomson continued, that, after paying special attention to various divisions of the organism in turn, we are coming back to that old part of the body that our forefathers used to regard as of so much importance, the bowels. At all times fermentations were going on in the intestines, and at the best moments of our lives putrid ptomaines were going into the kidneys, the liver, and other organs. The trouble with such patients as he was now speaking of was that they were suffering from prolonged self-poisoning, resulting from a deficiency of the natural antiseptics of the intestines, viz.: the secretions. This was the lithæmic neurasthenia of Dr. Gray. Having referred to the quality of the pulse and the character of the urine, which served as useful guides, he said that he had faith in only one real cure, and that was tent-life in the woods.

Dr. A. Jacobi said that of late it had been the tendency in medicine to get rid as far as possible of all names given to symptoms merely, and neurasthenia was of this class. We could speak of it only as a symptom, and it was a symptom common to so many conditions that the sooner it was abandoned the better. It was not simply weakness alone; we had been told that it was a chronic malnutrition of the nervous centres, due either to various adventitious causes or to an hereditary tendency. But congenital neurasthenia did not exist alone. With it was associated weakness of the circulation and the whole constitution. In every case of so-called neurasthenia, then, it should be our endeavor to make a diagnosis, if possible, of the original condition that gave rise to the symptoms met with.

Dr. A. D. Rockwell said that although unprepared to discuss the question at length, he could not refrain from the statement that he believed in the existence, just as he did in that of malaria. The term was, with limitations, a valuable one; although he thought it had been very much abused. The most important point of differentiation was between primary nervous exhaustion and lithæmia.

Dr. S. Baruch said that he was convinced that there was a complex of symptoms which was best designated by the term neurasthenia. In its treatment the principal indication was to prevent tissue change, and there was perhaps no better

method of securing this than hydro-therapy. Many of his patients suffering from this trouble he directed to take a cold plunge-bath every morning; care being taken that prompt reaction followed. He still believed in the term tonic also, and he thought the cold plunge one of the most valuable tonics that we had.

Dr. E. D. Fisher thought the word neurasthenia would be a very convenient one to retain until our knowledge of nervous diseases had become more complete than it was at present. The principal objection to its use was the danger of mistaking for the condition it implied some of the grave organic diseases, especially in the incipient stage; and it was necessary, therefore, that we should be on our guard in this respect. As regards the treatment of neurasthenia, since this condition represented merely functional disturbances, so far as we knew, uniformity was impossible, and each case must be handled according to its individual circumstances.

In closing the discussion Dr. Gray said that one of his objects in writing the paper was to elicit such an expression of opinion from various observers as had now been given. On the whole, it seemed to him that there was an immaterial difference between his own standpoint and that of those who objected to the term neurasthenia. There were certainly many symptoms not of organic origin which we could not classify without resorting to some such expression. It was, therefore, of practical service to retain it, and the subdivision into the three classes which he had indicated seemed to him a convenient one. In the future such advances would no doubt be made that many points which were now obscure would be cleared up, and many of our views would accordingly be modified.

P. B. P.

Cataract Extraction.

Dear Sir:—I read with great interest the article on "Cataract Extraction, etc.," by Julian J. Chisholm, M.D., in *THE JOURNAL* of November 3, 1888. I think Dr. Chisholm is correct in reducing restraints put on patients after the extraction of cataract. I have been an advocate of such a measure, as not putting the patients to bed afterwards, or if at all for a few hours only, for some years. Since my connection with the University of Louisville I have operated on, in the amphitheatre there, 40 or 45 cases of senile cataract. These patients have each walked or rode from five blocks to five miles immediately after the operation, and I have to record the first case in which any serious inflammation has followed, in the person of a man over 80 years old, who removed his bandage the second morning and took a walk. I believe, with Dr. Chisholm, that with less restriction the eye does fully as well and the patient's general condition is left much better.

I regret though to see Dr. Chisholm apologizing for, or rather trying to account for his average of success, by saying, in reply to Dr. Knapp, that his assistant, "Dr. Belt has explained in his paper how these cases were failures in seeing, even when no inflammatory complication had arisen during the after-treatment of the cases; and how an ophthalmoscopic examination showed glaucoma, nerve atrophy and choroidal patches."

Is it customary to operate on such cases? Is it not nearly as possible to make such a diagnosis before the extraction of the cataract as afterwards? As the saying goes, "What is the matter with the candle test of the visual field? Let us show mercy, and consideration for the comfort of those who must submit to our dictation," by dictating that an operation is not advisable under such conditions as no vision will result. You cannot have a disease of the front of the eye which will shut out quick perception of light if the retina, choroid and optic nerve are sound. I never extract or needle a cataract without making the candle test of the visual field. Dr. Chisholm will find in the book commonly used for recording cases of cataract extractions a place for such a record, marked "visual field."

Yours,

W. CHEATHAM, M.D.

303 Chestnut St., Louisville, Ky., Nov. 7, 1888.

Sour Milk and Buttermilk in the Prevention and Treatment of Diphtheria.

Dear Sir:—The quoted article on "Diphtheria in Cats," in a recent issue of *THE JOURNAL*, reminds me of a case of this disease occurring in a favorite Maltese cat of mine many years ago, and for the relief of which I ordered *sour* milk and buttermilk, which she eagerly took and speedily recovered. These were exhibited as comprising the essential nutritive and remedial properties combined in an acceptable form, and to satisfy the instinctive desire for acidulous substances existing in diphtheria with kindred diseases. The milk is most nourishing and partly predigested, while the lactic acid therein, to which they owe their medicinal power, is an active digestive, depurant, refrigerant, antiscorbutic, antiphlogistic, antiseptic and febrifuge, solvent of the fibro-plastic membranous exudate, and general resolvent of this disease with collateral maladies. They are hence generally applicable in the preventive and curative treatment of scorbutic, malarial, inflammatory, infectious, contagious and pernicious diseases, local and constitutional, both in the inferior animals and human beings. Therefore, if people would drink sour milk and buttermilk, sweetened if desired, and give them to dependent children and the lower animals, instead of throwing them away as worthless, thus wasting a valuable nutritive and medicament, they would protect themselves and subjects largely against and

relieve some of the most pestilential and virulent diseases known, as well as many of the minor ailments of life. Alone or in conjunction with the mineral and vegetal acids, and other suitable nourishment and remedies as specially indicated, I have exhibited them for many years and can fully testify to their superior value as nutrient, preventive and resolvent agents in such maladies. Sour milk and buttermilk thus act both as valuable, agreeable food and medicine that can be used *ad libitum*, besides being cheap, abundant and convenient. Each should be taken frequently as an effective digestive, antalkaline, and prophylactic to neutralize the superalkalinity of blood and system as often occurring, and to ward off or relieve diphtheria, scorbutic, inflammatory and pestilential maladies of every grade and character, in cats, dogs, pigs, and other inferior animals, in common with mankind.

GEORGE J. ZIEGLER, M.D.

November 11, 1888.

BOOK REVIEWS.

THE LIFE INSURANCE EXAMINER. A Practical Treatise upon Medical Examinations for Life Insurance. By CHARLES F. STILLMAN, M.S., M.D., Medical Examiner for the Mutual Life Insurance Company; Examining Surgeon of the Travelers Insurance Company of Hartford, etc., 8vo, pp. 186, 16, viii. New York: The Spectator Company. 1888. Chicago: W. T. Keener.

The medical examiner for life insurance occupies an important position; a careless or incomplete examination will generally result in injustice to the applicant for insurance or to the company. The lines of procedure of the medical examiner are being drawn more sharply and closely, and the time has come when the examiner must be exact, or as exact as possible, and must render decisions based on scientific facts, so far now known.

Dr. Stillman is well known by his work in orthopædic and general surgery, and for exactness and completeness in all the work he undertakes. The book before us is divided into three parts, the first dealing with "Life Insurance Formalities," the medical examiner's report, instructions to medical examiners, the agent's report, and instructions to agents. Part II treats of "Examination of the Applicant," identification, environment, physique, physical diagnosis. Part III relates to the "Diseases relating to Life Insurance," hereditary influences, nutrition and diathesis, etc. An appendix contains legal questions relative to medical examiners, and other matter, including life insurance statistics.

The book contains a superimposed dissected colored plate of the anterior aspect of the body, made by the author, an engraving from life of a candidate stripped for an insurance examination, and a number of engravings of the microscopic appearance of urinary deposits. Life insurance methods are now far beyond those of a dozen years ago, and the books on the subject, written at that time are now out of date. The present work is for the active examiners for life insurance, and to them we can heartily recommend it.

THE MODERN TREATMENT OF DISEASES OF THE LIVER. By PROFESSOR DUJARDIN-BEAUMETZ. Translated by E. P. HURD, M.D. Published by Geo. S. Davis, Detroit, Mich. Pp. 185. Price 25 cents.

The volume before us is one of the Physician's Leisure Library Series for 1888. The translation is very well made. The book is most interestingly written. As is always true of what Dujardin-Béaumont writes, much that is now in physiology, as well as what is now in the therapeutics of the diseases discovered, can be found here. The various chapters bear the following titles: The Liver from a Therapeutic Standpoint, Cholagogues, Treatment of Biliary Lithiasis, Treatment of Jaundice, Treatment of Engorgements of the Liver; Treatment of Inflammations of the Liver, Treatment of Hydatid Cysts of the Liver.

MISCELLANEOUS.

A TRAINING SCHOOL FOR NURSES has been opened in connection with the General Public Hospital at St. John, N. B.

DR. H. S. PIGGINS, who for a number of years has been practicing his profession at Caledonia, Minn., has removed to Duluth.

DR. FRANCIS J. GOULD, who died of yellow fever in Jacksonville, Fla., was a native of Lexington, Mass., and a graduate of Harvard, class of 1850. He was 60 years of age.

DR. JOSEPH O'DWYER, the originator of intubation of the larynx, has been appointed Professor of Diseases of Children in the New York Post-Graduate Medical School and Hospital.

MILK SICKNESS.—Isaiah Everly, of Patricksburg, Ind., died of milk sickness on November 1, his widow is seriously ill, and cattle have perished from the disease, which prevailed twenty-five years ago on the same farm.

NO EPIDEMIC AT DEMARARA.—A report from the U. S. Consul at Demarara to the Department of State says that there have been but two cases of yellow fever there, and that his bills of health while showing that the disease exists does not make it appear that it is epidemic.

CHARLES H. PHILLIPS, for many years a prominent manufacturer of chemicals, of New York city, died suddenly of apoplexy, on Nov. 5. He was a member of the

American Geographical Society, President of the C. H. Phillips Chemical Co., and connected with all the prominent societies in his line of business.

A TERRIBLE CATTLE DISEASE is raging in the Philippine Islands. In one province alone over 66,000 animals have died.

THE DISTRICT MEDICAL SOCIETY OF CENTRAL ILLINOIS will hold its semi-annual meeting in the Court House at Vandalia, on Tuesday, November 20, 1888. J. Huber, M.D., of Pana, is President, and J. H. Miller, M.D., of Oconee, is Secretary.

THE SECTION ON DISEASES OF CHILDREN of the American Medical Association, at the last annual meeting, appointed the following committee to investigate the subject of infant feeding, viz.: C. W. Earle, M.D., of Chicago; W. B. Atkinson, M.D., of Philadelphia; and W. S. Christopher, M.D., of Cincinnati, Ohio.

SIX CHILDREN AT A SINGLE BIRTH.—At Dallas, Tex., on Nov. 3, Mrs. Geo. Hirsh, of Navarro county, gave birth to six children. The mother and children are doing well. There are four boys and two girls. All are perfect and fully proportioned, but very small. The babies are all tagged, to preserve their identity.

DAMAGES FOR MALPRACTICE.—That the character of the medical school or sect to which a practitioner of medicine belongs does not relieve him from liability, is shown by a recent decision of the Supreme Court of Wisconsin. C. F. Harrington is a clairvoyant and physician of Madison. He treated a man named Thomas Nelson for many months for rheumatism, whereas he had hip disease, and by reason of this malpractice Nelson was crippled for life. He brought suit against Harrington for damages, and obtained a judgment of \$1,500 in the lower court. Harrington appealed, his contention being that he should be free from liability because Nelson was fully aware of the peculiar medical school to which he belonged. The Supreme Court confirmed the judgment of the lower court, holding that the question of the character of the medical school in no manner whatever relieved a doctor from liability for malpractice. This is the first time on record, we believe, that this peculiar phase of this question has come up in the high courts.

HEALTH IN MICHIGAN.—For the month of October, 1888, the reports indicate that tonsillitis, neuralgia, typhomalarial fever, influenza, bronchitis and scarlet fever increased, and that diarrhœa, dysentery, cholera morbus, decreased in prevalence.

Compared with the average for the month of October for the nine years, 1879-1887, the reports indicate that consumption of the lungs, intermittent fever, diarrhœa, remittent fever and tonsillitis were less prevalent in 1888. For the month of October, 1888, compared with the average for corresponding months in the nine years, 1879-87, the temperature was lower, the absolute humidity and the day and night ozone were less, and the relative humidity was about the same.

Including reports by regular observers and others, diphtheria was reported present at thirty-six places in Michigan in October, 1888, scarlet fever at thirty-two places, typhoid fever at forty-three places, and measles at seven places.

Reports from all sources show diphtheria at sixteen places more, scarlet fever at eight places more, typhoid fever at eight places more, and measles at the same number of places in October, when compared with the preceding month.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its first annual meeting at Birmingham, Ala., December 4, 5 and 6, 1888. The officers for 1888 are: President, Dr. W. D. Haggard, Nashville, Tenn.; Secre-

tary, Dr. W. E. B. Davis, Birmingham, Ala.; Judicial Council, Dr. John S. Cain, Nashville, Tenn., Dr. Hunter McGuire, Richmond, Va., Dr. J. M. Taylor, Corinth, Miss., Dr. DeSaussure Ford, Augusta, Ga., Dr. R. A. Kinloch, Charleston, S. C.; Chairman Committee of Arrangements, Dr. J. D. S. Davis, Birmingham, Ala.

FIRST DAY.—MORNING SESSION.

The Association will be called to order by the President at 10 o'clock, A.M.

Prayer by the Rev. D. I. Purser, D.D.

Address of Welcome, by Hon. A. O. Lane.

Reading of Minutes.

Report of the Committee of Arrangements.

Report of the Judicial Council.

Miscellaneous Business.

The Annual Address of the President, Dr. W. D. Haggard, Nashville, Tenn.

Papers.—Gastrostomy, by W. B. Rogers, M.D., Memphis, Tenn. Superinvolution of the Uterus following Trachelorrhaphy, by Virgil O. Haddon, M.D., Atlanta, Ga. Indications for Operative Interference in Cerebral Troubles, T. O. Summers, M.D., Jacksonville, Fla. A Case of Tubal Pregnancy, presenting Interesting Medico-Legal Relations, E. P. Sale, M.D., Memphis, Tenn. The Extravagancies and Impractical Requirements of Modern Antiseptic Surgery, so far as the Country Practitioner is Concerned, by J. M. Taylor, M.D., Corinth, Miss. Antiseptics in Surgery and Gynecology, by F. T. Meriwether, M.D., Asheville, N. C. My Antiseptic Bags; or Practical Aseptic Surgery, by J. W. Long, M.D., Randleman, N. C.

Adjournment at 2 P.M.

Excursion to North Birmingham at 3:45 P.M.

EVENING SESSION, AT 8 P.M.

The Annual Oration, by Dr. W. F. Hyer, of Meridian, Miss., at O'Brien's Opera House. After the Oration the audience will be entertained by the Mendelssohn Club.

SECOND DAY.—MORNING SESSION, AT 9:30 A.M.

Report of Treasurer.

Report of Judicial Council.

Miscellaneous Business.

Papers.—Floating Kidney, with Vicarious Menstruation, by DeSaussure Ford, M.D., Augusta, Ga. New Treatment of Intra-Uterine Fibroids, by E. J. Beall, M.D., Fort Worth, Texas. The Medical Treatment of Fibroid Tumors of the Uterus, by Bedford Brown, M.D., Alexandria, Va. Alexander's Operation, by W. L. Nichol, M.D., Nashville, Tenn. The Present Status of Electro-Therapeutics in Gynecology, by J. R. Buist, M.D., Nashville, Tenn.

Excursion to Gate City at 3:45 P.M.

EVENING SESSION, AT 8 P.M.

Hysterectomy in Cancer of the Uterus, by W. H. Wathen, M.D., Louisville, Ky. Fractures of the Forearm, by Jno. Brownrigg, M.D., Columbus, Miss. Treatment of Fractures with Plaster of Paris Splints, by W. F. Westmoreland, Jr., Atlanta, Ga. Interesting Cases of Surgery, by R. M. Cunningham, Pratt Mines, Ala. The New Departure in Uterine Therapeutics—the Dry Method, by T. A. Means, M.D., Montgomery, Ala. A Study of the Various Methods of Treatment of Laceration of the Perineum and Rectocele, with Report of Cases, by J. H. Blanks, M.D., Meridian, Miss. Perineal Lacerations, by M. C. Baldrige, M.D., Huntsville, Ala.

THIRD DAY.—MORNING SESSION, AT 9:30 A.M.

Report of Judicial Council.

Unfinished and Miscellaneous Business.

Papers.—Cystoscopic Explorations, by A. V. L. Brokaw, M.D., St. Louis, Mo. Shock of Injury and Its Effects, by Jno. R. Page, M.D., Birmingham, Ala. Some Practical Thoughts in Surgery and Gynecology, by James Guild,

M.D., Tuscaloosa, Ala. The Field and Limitation of Laparotomy, by I. S. Stone, M.D., Lincoln, Va. Operative Procedures in Epilepsy, by J. T. Wilson, M.D., Sherman, Texas. Surgical Tuberculosis, by W. Locke Chew, M.D., Birmingham, Ala.

AFTERNOON SESSION, AT 3 P. M.]

Treatment of Certain Forms of Menorrhagia, with Report of Cases, by W. D. Bizzell, M.D., Atlanta, Ga. Electrolysis in the Treatment of Urethral Strictures, by S. M. Hogan, M.D., Union Springs, Ala. Operative Procedures in Hypertrophy of the Prostate, by R. D. Webb, M.D., Birmingham, Ala. Electrolysis in Morbid Alterations produced in the Prostate by Gonorrhœa of the Urethra, by J. D. S. Davis, M.D., Birmingham, Ala. Dermoid Cysts of the Coccygeal Region, by E. J. Beall, M.D., Fort Worth, Texas.

EVENING SESSION, AT 8 P. M.

Discussion—Abdominal Surgery.
Election and Installation of Officers.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from November 3, 1888, to November 9, 1888.

Lieut.-Col. Basil Norris, Surgeon, will be relieved from duty in the Department of the Columbia by the commanding General of that Department, and will report in person, on or before November 14, 1888, to the commanding General Div. of the Pacific, for duty as Medical Director of that Division and of the Department of California. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, Lieut.-Col. Edward P. Vollum, Surgeon, on being relieved from duty as Medical Director Dept. of Texas by Lieut.-Col. Joseph C. Bailly, Asst. Medical Purveyor, under War Department order dated October 31, 1888, S. O. 255, A. G. O., will repair to New York City, assume the duties of acting Asst. Medical Purveyor, and take charge of the medical purveying depot at that place. Par. 2, S. O. 255, A. G. O., Washington, November 1, 1888.

Lieut.-Col. Charles T. Alexander, Surgeon, is relieved from further duty in the Dept. of Dakota, and will report in person to the commanding General Dept. of the Columbia for duty as Medical Director of that Department. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

Col. Joseph C. Bailly, Asst. Medical Purveyor, is, at his own request, relieved from the charge of the medical purveying depot in New York City, and is, by direction of the President under the provisions of the Act of Congress approved June 23, 1874, assigned to duty as surgeon in the Medical Department. He will report in person to the commanding General Dept. of Texas for assignment to duty as Medical Director of that Department, to relieve Lieut.-Col. E. P. Vollum, Surgeon. Par. 1, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, Lieut.-Col. Joseph C. Bailly, Asst. Medical Purveyor, will transfer at once the public funds for which he is now responsible to Capt. Henry Johnson, Medical Storekeeper, who will assume temporary charge of the medical purveying depot in New York City, retaining charge thereof until relieved in person by Lieut.-Col. E. P. Vollum, Surgeon, under his assignment as acting Asst. Medical Purveyor, to whom Capt. Johnson will then transfer the public funds. Par. 1, S. O. 257, A. G. O., Washington, D. C., November 3, 1888.

Major Henry McElderry, Surgeon U. S. Army, granted leave of absence for two months, by direction of the Secretary of War, to take effect on the completion of his present duties. Par. 3, S. O. 256, A. G. O., Washington, D. C., November 2, 1888.

Capt. Clarence Ewen, Asst. Surgeon, is relieved from duty at Ft. Sidney, Neb., to take effect on the expiration of his present leave of absence, and will report in person to the commanding officer, Madison Bks., N. Y., for duty at that post. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1888.

Capt. Daniel M. Appel, Asst. Surgeon, is relieved from duty at Ft. Davis, Texas, and will report in person to the commanding officer, Ft. Sill, Ind. Ter., for duty at that post, reporting by letter to the commanding General Dept. of the Missouri. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1888.

Capt. J. Van R. Hoff, Asst. Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 134, Dept. of the Missouri, Ft. Leavenworth, Kan., November 1, 1888.

Capt. Curtis E. Price, Asst. Surgeon, granted leave of absence for two months, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

Capt. Marshall W. Wood, Asst. Surgeon, granted leave of absence for one month, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

By direction of the Secretary of War, Capt. John J. Cochran, Asst. Surgeon, is relieved from temporary duty at Hdqrs. Div. of the Pacific, and will report in person to the commanding officer, Ft. Adams, R. I., for duty at that post. Par. 2, S. O. 256, A. G. O., Washington, November 2, 1888.

By direction of the Secretary of War, Capt. Norton Strong, Asst. Surgeon, is relieved from duty in the Dept. of Ariz., and will report in person to the commanding officer, Ft. Schnyler, N. Y., for duty at that post, and by letter to the commanding General Div. of the Atlantic. Par. 4, S. O. 255, A. G. O., Washington, November 1, 1888.

Capt. W. O. Owen, Jr., Asst. Surgeon, Ft. Leavenworth, Kan., will proceed at once to Ft. Sill, Ind. Ter., and report to the commanding officer for temporary duty at that post. Hdqrs. Dept. of the Missouri, S. O. 133, par. 1, Ft. Leavenworth, Kan., October 30, 1888.

By direction of the Secretary of War, First Lieut. James D. Glennan, Asst. Surgeon, recently appointed, will repair from this city to Willets Point, N. Y., and report in person to the commanding officer of that post for duty. Par. 3, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, First Lieut. Alfred E. Bradley, Asst. Surgeon (recently appointed), will report in person to the commanding officer, David's Island, N. Y., for duty at that depot, reporting by letter to the Superintendent of the recruiting service, New York City. Par. 14, S. O. 260, A. G. O., November 7, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 10, 1888.

Surgeon D. Dickinson, ordered to Naval Hospital, Mare Island, Cal.

Surgeon G. P. Bradley, detached from Naval Hospital, New York, and to "Iroquois."

Surgeon R. C. Persons, detached from Army and Navy Hospital, Hot Springs, Ark., and to Naval Hospital, New York.

P. A. Surgeon Ernest Norfleet, detached from Naval Hospital, Mare Island, Cal., and to the "Trenton."

Asst. Surgeon H. N. T. Harris, detached from Naval Hospital, Mare Island, Cal., and to the "Kearsarge."

Asst. Surgeon J. S. Sayre, ordered to examination for promotion.

P. A. Surgeon H. G. Beyer, detached from "Trenton" and granted six months' leave, with permission to leave the United States.

Patrick H. Bryant and Luther L. von Wedekind, commissioned Asst. Surgeons U. S. Navy.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. XI.

CHICAGO, NOVEMBER 24, 1888.

No. 21.

ORIGINAL ARTICLES.

THE TREATMENT OF PERITONITIS.

Read in the Section on Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY WM. H. MYERS, M.D.,
OF FORT WAYNE, IND.

PATHOLOGICAL DEFINITION OF PERITONITIS.

"Increased vascularity-softening or thickening of the peritoneal membrane, with effusion of coagulable lymph, or of a sero-albuminous or sero-puriform, or sero-sanguineous fluid, sometimes with organized adhesions." Copland.

When Dr. Rushton Parker asserts in his article on Peritonitis, published in the "Dictionary of Practical Surgery," that "the treatment of peritonitis is simple enough whatever be its cause," and that "opium, alcohol and liquid diet is the treatment that may be uniformly adopted in all its forms," he fails to apprehend that it is only through a perfect diagnosis in each case that we can see in what direction surgical or therapeutical interference should be attempted; for connected with the treatment of peritonitis are several questions I will submit for your consideration:

Is acute peritonitis ever idiopathic?

Is it a symptom or a disease?

Is it always septic?

Again I may ask—

Does the treatment properly belong to the physician or surgeon?

In your answer you will be brought irresistibly back to diagnosis, since from it all treatment must flow. It is then of primary importance that in every case the ætiology be definitely settled at the earliest moment. When we have arrived at the conclusion that peritonitis is present or impending, and we have discovered the cause, the blow must be struck simultaneously with the advent of the enemy; no delay can safely be tolerated, the only hope of rescue being the sudden arrest of the disease. We must learn the beginnings. As remarked by Sir William Gull: "Often when the gathered clouds of the final storm have filled the atmosphere it is in vain that we look around to see from what point of the Heavens it began." By the time that the normal outlines of the abdomen are obscured by tympanitic distension, respiration quickened and shallow, the pulse rapid and wiry, the supreme moment for precise diagnosis is past.

What are the grounds for a true discrimination? Certainly not the teaching that acute peritonitis may be idiopathic in a healthy subject. Upon this subject Dr. Savage, of Birmingham, England, in 1885, expressed the following opinion: "We are learning, if we have not already learned, to look upon peritonitis as a symptom of some organic change and not as a disease in itself; and this is well for our patients, because operative measures can do much for it; we shall ere long regard so-called 'idiopathic peritonitis' almost as a curiosity." Professor Bartholow's opinion is, that the great majority of cases of peritonitis come from previous disease in the peritoneal or pelvic cavity. He believes it to be extremely rare, indeed, for an idiopathic case to occur. Habershorn refers to 3,752 inspections made in Guy's Hospital; 501 were instances of peritonitis, but could not find a single case that he considered idiopathic. "A pure idiopathic peritonitis is difficult to realize under any circumstances; in puerpera it is impossible." Barnes.

Believing as I do, that acute peritonitis is never idiopathic but must be septic I am compelled to believe that the treatment must be modified in accordance with these views.

THE EVOLUTION OF THE TREATMENT OF PERITONITIS AFTER LAPAROTOMY.

On January 1, 1859, Sir Spencer Wells made an abdominal section and removed an ovarian tumor; the patient died thirty-two hours after. One hour after the operation she had a pulse of 100, and complained of some pain; a suppository containing $\frac{1}{3}$ grain of morphine was passed into the rectum; two other suppositories at intervals of half an hour; a sixth suppository at midnight; pulse 130; 9 A.M., pulse 124; eighth suppository at noon. The autopsy revealed the presence of peritonitis. A considerable amount of free liquid was present in the cavity generally; the fluid had a pungent, irritating effect upon the skin. Sir Spencer in reviewing the case asks the pertinent questions:

What was the cause of death?

Did she get too much opium? Two grains of

morphine within ten hours and 1 grain in the succeeding twelve hours. He dismisses this consideration and asks "Did she die of peritonitis?" This question he answers thus: "My impression is, that if peritonitis killed her, it was indirectly by the formation of a morbid poison; the serum was very acrid." "If then my patient could generate a poison capable of killing other people may it not have killed her?" His practical commentary is in these words: "It may possibly be advisable, in some cases, to provide for a free outlet of the effused serum." (It was about this period when Baker Brown quailed before what he called peritonitis as a cause of death after ovariectomy.) These reflections were followed by the introduction of the drainage-tube and drainage of the peritoneal cavity.

Sir James Paget said in 1862, in an address delivered before the British Medical Association, that "some of the deaths after surgical operation were preventable; and that "the mortality will be reduced if the members of the Association will decide that it shall be."

In 1864, Sir Spencer Wells directed attention to the existence of germs in the atmosphere, and advised precautions against their entrance from without or their development within, in abdominal sections. In 1877 Lister arrived in London, and the questions of aseptic and antiseptic surgery, and their applicability to ovariectomy were considered; for in the inflammatory products within the peritoneal cavity, the effusion, germs were found; living organisms with an indefinite power of reproduction, and when once implanted in a suitable soil multiplying indefinitely. This is the doctrine of the day.

Germs are living. All living things require certain conditions for their growth and development; vitality their poison, non-vitality their food. We do not propose to enter into the question, whether microorganisms be the cause or result of the morbid processes with which they are associated, but to study the methods of interference: 1. By removing the germs; 2. By removing the soil in which they grow.

Microorganisms outside the body, can be destroyed by germicides; but when they have once gained entrance and are inside the pelvic cavity all we can do is to sustain the organism, in the struggle for existence between the cells which compose it and the bacteria which have invaded it. The clinical means most highly valued are opium by the physician; salines drainage and surgical procedures, when necessary, by the surgeon.

Grailly Hewitt, of London, in 1868, quotes Mr. Clay as saying:

"The chief mortality, 48 per cent., arises from peritonitis after ovariectomy." Baker Brown after a series of disasters utters the truism: "It's the peritonitis that beats us." Tait now informs us

that now we beat the peritonitis; on the slightest indication of its appearance, after ovariectomy, we give a rapidly acting purgative, it matters not what, the patient's bowels are moved, and the peritonitis disappears." "This practice," says Tait, "was introduced by me in 1875, and is now almost uniformly adopted." He continues: "How different from the views we had drilled into us years ago, that opium was the sheet anchor of the practitioner in all abdominal troubles, when I say that all opiates are forbidden in my practice."

This may be regarded as the latest phase in the evolution of the treatment of peritonitis after abdominal sections. This I regard as the greatest advance that has been made, and to Mr. Tait is solely due the credit of it. In reply to a letter of recent date he writes as follows:

7, The Crescent, Birmingham, April 16, 1888.

Dear Sir:—Thanks for your very kind letter. I am perfectly satisfied, and I think the majority of practitioners who have tried it also agree that the best treatment for peritonitis, especially when occurring after an operation, is an early administration of saline cathartics. It is a practice which I had not seen the slightest reason to depart from.

Yours very truly,

LAWSON TAIT.

In a letter from Dr. Joseph Price, of Philadelphia, occurs the following statement with reference to the treatment of acute peritonitis: "I hold very strong convictions in the strictly good effects produced by the free use of salines; they do most decidedly imperil the safety of the many germs, beside relieving the overloaded and inflamed tissues and congested conditions of all the abdominal and pelvic viscera. I have not the power of too strongly urging the use of salines upon the slightest indications of local or general peritonitis. I have never known them to disturb in any way the vital power other than to benefit."

Dr. Charles B. Penrose, of Philadelphia, sent the following reply to a letter requesting his experience in the treatment of acute peritonitis.

"My experience is limited altogether to peritonitis following laparotomy; in all cases of abdominal section, sulphate of magnesia or Rochelle salts is administered in a large dose the moment any tendency to undue distension or general abdominal pain is noticed. I think that when patients survive the first shock of peritonitis, they die subsequently from the same causes which produce death in intestinal obstruction from other causes. At the onset of the peritonitis it may be absorbed by salines; after it is well under way, however, I think that the salines save life by overcoming the intestinal obstruction. I think that statistics show beyond a doubt the superiority of the saline treatment over the opium treatment, at least after laparotomy." Speaking of the one hundred consecutive successful cases of laparotomy by Dr. Price and himself, he says he can-

not recall one case in which opium, even paragonic, was given.

Grieg Smith in his work upon "Abdominal Surgery," in the first edition, says: "After abdominal operations if peritonitis, local or general follow, opium is not the best treatment. As a rule, sedatives are to be condemned. I had oftener than once recourse to a saline purge in peritonitis; a purge carries off great quantities of gas and fluid, relieves the distension, and probably by its physiological action relieves engorgement of intestinal vessels."

Grieg Smith in the second edition of his work says: "Over and over again, I have been able to demonstrate to students and medical men, the value of a saline purge in case of incipient peritonitis. In grave abdominal cases I positively like to see diarrhœa natural or artificial. Slowly, but surely, the therapeutic virtues of purges in operation are being recognized. Among the most enthusiastic supporters of the plan are such well-known surgeons as Gill Wylie, Baldy, Penrose, and Gardner." Here he quotes the last named as saying: "In my work during the year I have given no opium, and invariably, immediately after the appearance of distension, pain, vomiting, I have given purgatives with the most signal advantage.

We are not so completely impressed with the authoritative decisions of tradition as to believe the rational treatment of acute peritonitis to be—to benumb the sensibilities, reduce the respirations, and contract the pupils with opium in heroic doses; rather should we prevent the presence of germs and expel them from the pelvic cavity by drainage.

Narcotics.—For opium, its advocates claim that pain is annulled, the nervous system tranquilized, sleep induced, the shock lessened and the peristaltic movements of the bowels arrested.

Salines.—For these, their advocates claim that by their use, we "imperil the germs," deplete congested peritoneal vessels, and drain off through the intestines serum contained in the peritoneal cavity.

While we admit that opium relieves pain, we also claim that it prevents the escape of poisonous products. We also deny that it is necessary to give opium to arrest peristalsis, for the reason that in an acute attack of peritonitis complete paralysis of the muscular walls of the intestines exists, destroying its function and producing often obstruction.

In support of this view, Godlee (as to the diagnosis in peritonitis) says: "It seems worth emphasizing that peritonitis *per se* ought always to be considered as one of the possible causes of intestinal obstruction, and that the complete absence of visible peristalsis is an important indication of its presence."

Charles Penrose, in an article published in the

Medical and Surgical Reporter, Philadelphia, says: "The danger of moving the bowels after exposure of the peritoneum has been much exaggerated. It seems probable that the peritoneum is subjected to at least as much irritation from the tension and movement caused by the distending gas as it would be from any peristaltic motion of the muscles of the intestines."

We are advised to keep the bowels in splints; this is in direct conflict with the law that micro-organisms require the condition of rest for their development; they will not multiply in the circulating blood. I had one painful experience where I kept the bowels in splints, after an ovariectomy; during the first week nothing untoward happened, but on the seventh day peritonitis supervened, until on the fourteenth day, when she died with symptoms of strangulation and the autopsy revealed that it depended upon adhesive bands, uniting coils of intestines. Had I prescribed a saturated solution of sulphate of magnesia and kept up a peristaltic action, the formation of false bands and adhesions could not have occurred. In confirmation I will refer to the *Berliner Klinische Wochenschrift*, January and February, 1874.

On the 28th of June, 1887, I made an abdominal section and removed both ovaries; they were cystic; on the second day following a chill and rapid development of peritonitis. I immediately gave half an ounce of saturated solution of sodæ et potass. This was followed by profuse watery discharges; the vomiting ceased; the tympanitis disappeared, the pulse and temperature declined in a few days becoming normal—complete recovery.

On the 13th of November, 1887, I was called to visit Mrs. C., æt. 36. I found a ventral hernia with strangulation; the tumor the size of the double fist; symptoms urgent. The taxis having failed laparotomy was decided upon, stricture divided reduction and excision of the sac; the peritoneal cavity closed by stitches, the final dressing as after ovariectomy. On the third day she had a severe chill, pain followed by vomiting, tympanitic, distension of the abdomen. Pulse, 120, temperature 101°. Treatment, heroic doses of opium prescribed by the attending physician. I ordered the opium discontinued and gave a full dose of magnesia; copious purgation followed, after which the peritonitis rapidly subsided and the patient speedily recovered.

Traube reports a case of a patient affected with general peritonitis, and in whom after death no adhesions or bands between the folds of intestines existed, although there were distinct evidences of false membranes on the parietal peritoneum. He attributes this unusual occurrence to the fact that the patient before death, had suffered from diarrhœa; he believes that constant peristaltic movements, which take place owing to intestinal

irritation, prevent the formation of adhesions and break those which may be formed. He accordingly questions the advisability of keeping the intestines at rest; claims that it facilitates the formation of adhesions; he is not convinced that inflammation is increased by the peristaltic movements, and suggests that peritonitis be treated by aperients.

While Treves advocates the use of opium in peritonitis, he admits that the clinical outlines of the case may be consequently blurred and serious errors in the diagnosis result in consequence.

THE DANGERS OF PERITONITIS.

The trinity of peritonitis, tympanitis and vomiting are the Furies of abdominal surgery.

In 1868, Baker Brown reported 111 cases of ovariectomy and thirty-five deaths. Speaking of the danger to be apprehended, places prominently, acute peritonitis as of most frequent occurrence; he gave opium in heroic doses, and finally says: "My experience has not given me that confidence in opium which most physicians possess." Peaslee, in 1872, in discussing peritonitis after ovariectomy said: "Give opium in quantities sufficient to remove the pain, and especially by hypodermic injection of muriate of morphine $\frac{1}{4}$ to $\frac{1}{2}$ grains, every two hours or oftener.

In 1872, Sir J. Y. Simpson in a lecture on ovariectomy, said: "Perhaps the most frequent cause of death in connection with the operation is peritonitis. The treatment is opium."

Barnes in 1874, in his treatise upon this subject, recommends leeches, opium and mercury.

Thomas said: "Peritonitis, which proves the cause of death in about one-fourth of all who die from this operation, (ovariectomy) should be treated by full doses of opium.

In the International Encyclopedia of Surgery, 1886, we find the following: "After ovariectomy peritonitis is to be counteracted by increased doses of morphine hypodermically or by the rectum (Chas. Caurel Lee, New York).

In 1866, Dr. Gardner, of Canada, opened the peritoneal cavity thirty-eight times with three deaths, and he declares that, "experience has taught him that opium in most cases is more harmful than beneficial."

TREATMENT OF ACUTE PERITONITIS BY ABDOMINAL SECTION.

I believe that we ought to advocate and practice free incision drainages as practiced in the joints and in the inflammatory conditions of the pleura. The question of operative treatment in puerperal, as well as in other forms of peritonitis, has been strongly presented in a paper by Dr. Chalmers on Puerperal Septicæmia before the British Gynecological Society.

Lawson Tait in a recent publication declares, "I have now come deliberately to the conclusion that it is an act of almost criminal omission to

allow a case of peritonitis to die without abdominal section." Dr. Barnes has expressed similar views. Whenever pus has formed and collected in the abdomen and pelvis, he believed the indication was strong to make an incision so as to give it exit. This is in accordance with the rules of surgery in the brain, in the pleural cavity, and why not in the abdomen.

In a letter from Grieg Smith upon the surgical procedure, he writes as follows:

16 VICTORIA SQUARE, CLIFTON, April 6, 1888.

My Dear Sir:—In treating suppurative peritonitis by operations I am gradually coming to the belief that treatment with a wet and not a dry peritoneal cavity is advisable. The intestines are kept floating in a warm and mildly antiseptic fluid for one or two days, or even longer. I think it prevents the formation of adhesions, and consequent gaseous distension with its serious consequences.

J. GRIEG SMITH.

From the above quotations we are led to infer that opium is the routine remedy in acute peritonitis; is believed in as profoundly as if it were a religious dogma, and Professor Clark is referred to in the same spirit that actuated the Church of Rome in her appeal to the Greek Fathers to sustain her supremacy.

That the acceptance of an opinion in medicine does not afford evidence of its truth, is well illustrated by the fact that the sanguinary doctrines held by Professor Charles D. Meigs are now only found in his books, and not adopted as formerly by clinicians. It will be well to remember that the influence of authority in matters of opinion, does not prove that numerous persons have carefully examined the questions upon its own merits, and have founded their conclusions upon an independent investigation of the evidence. So the number of authorities adduced has, in fact, no weight, and thus their numbers alone are no more entitled to be considered as independent observers than the successive compilers who transcribe an historical error are entitled to be reckoned as independent witnesses.

DENTOGENY.

Read in the Section on Dental and Oral Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY WILLIAM C. BRITTAN, M.D.,
OF DETROIT, MICH.

The first indication of tooth development in the human embryo is noticeable at a period somewhere about the fortieth day of fetal life, and consists simply of an increased thickening of the epithelium over that part which is to form the future alveolar border.

At this time may be found, sometimes, not always, upon the lingual surface a slight depression or groove, the "dentinal groove" of writers, which when present consists of an infolding only of the mucous tissue, and is usually more marked

anteriorly than elsewhere. As, however, it is not always present, no histological importance can reasonably be attached to it. Later a change is seen to occur at certain points in the cells of the epithelium, consisting of an enlargement of the cells and their nuclei, these points corresponding nearly to the position of the future teeth. This changed epithelial structure dips down into the adjacent embryonic tissue in the form of "cords," or rather of tubular glands (Plate 1). The cells of the outer layer of these cords have a columnar form, yet they are seen to have now lost much of their resemblance to those of the columnar layer of the epithelium with which they are said to be identical. Plate 2 shows one of these cords highly magnified.

These epithelial cords constitute the embryonic enamel elements and later form what is known as the "enamel organ," which is concerned mainly—but not wholly—in the production of the enamel of the tooth. Coincidentally with the above changes an increased activity has been in progress in the submucous tissue adjacent to these cords resulting in a multiplication of its cells and a consequent increased density of this tissue at points which occur sometimes beneath the cords, sometimes at one side (Plate 1-D.) and often one upon each side, in which case the enamel elements for two separate teeth of the same type are furnished from one cord.

These cell clusters of the submucous tissue gradually assume a papilliform appearance, pushing up against the overlying cord, in which they soon become nearly enveloped, and now constitute the so-called "dentine germ, or organ." In these two germs—the enamel and the dentine—we have the prime factors of tooth-building. And the processes here employed furnish problems many of which are yet unsolved. The interpretations which we shall give are solely the result of our own study of these tissues. The micrographic illustrations are from some of the preparations used for that purpose, and the preparations themselves are from the human embryo. If we err in any of the statements here made it is quite consoling to know that all other writers upon this subject have done the same. We believe, however, that we are well fortified.

Rapid developmental changes now occur. The cord, by a separation of its walls, assumes a somewhat "stirrup-like" form, its base conforming to the contour of the "dentine organ" until by the upward growth of the same all that part which is to compose the crown of the tooth is covered by the enamel organ in the form of a cap (Plate 3) which now separates itself from the original cord by the breaking up of that structure.

In this connection we would suggest that the prevailing dogma that the enamel organ for the second set of teeth is supplied from the cords of the first is incorrect. As a matter of fact they are

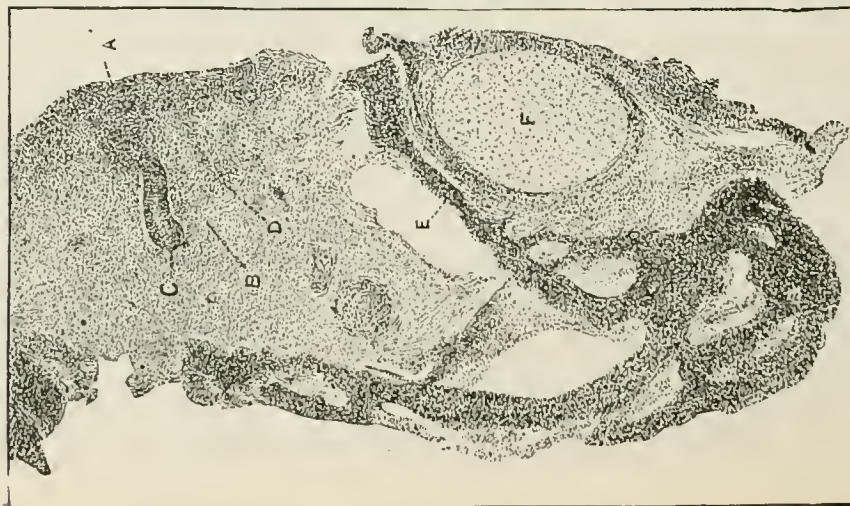
derived directly from the mucous epithelial layer just as in the first instance.

All the above changes occur previous to deposit of either enamel or dentine, but we now have both these organs in a stage of development nearly sufficient to begin that work, and from this point the progress of development is much slower than previously.

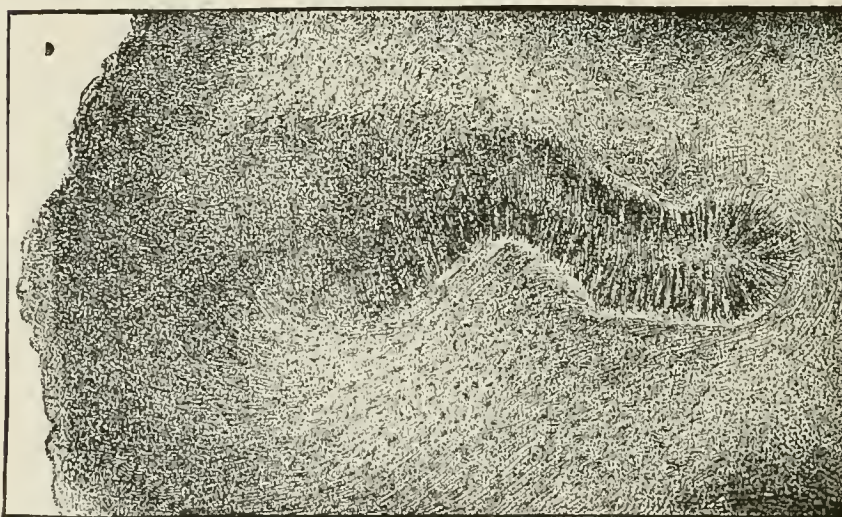
We will now, by referring to Plate 3, note some of the changes that have taken place in the "enamel organ" in its transition from the cord with its outer wall of columnar cells to its present condition. By the separation of its walls in the course of its development the cells of its interior have by growth and separation, and attachment to one another by their processes, now assumed the form of stellate cells, and now constitute that part of the organ known as the "stellate reticulum (B), the exact function of which is not understood. This structure occupies all that part lying between the inner and outer investments, viz.: the wall in contact with the dentine organ (D) and that in contact with the sacculus proper (E) which latter is the product of the contiguous embryonic tissue. Further, that at the point where the enamel organ embraces the *cervical portion of the embryonic tooth (G) the wall of the organ is folded upon itself*, thus bringing both walls (D and E) into mutual contact. These walls, although originally one and the same, here diverge, and now form two distinct and well differentiated structures. We also note that the outer investment (E) has lost all appearance of a columnar cell layer which characterized the original cord, and is now composed of a system of vessels and capillaries distributed through a fibrous membrane whose cells (mostly fusiform) now lie parallel to its surface.

At the inner wall (D) a very great change has also taken place. Here the original columnar form of the cells is still preserved at this stage of development, although greatly reduced in size, and having also lost other marked features of structure. Plate 4 gives a very good illustration of this boundary highly magnified.

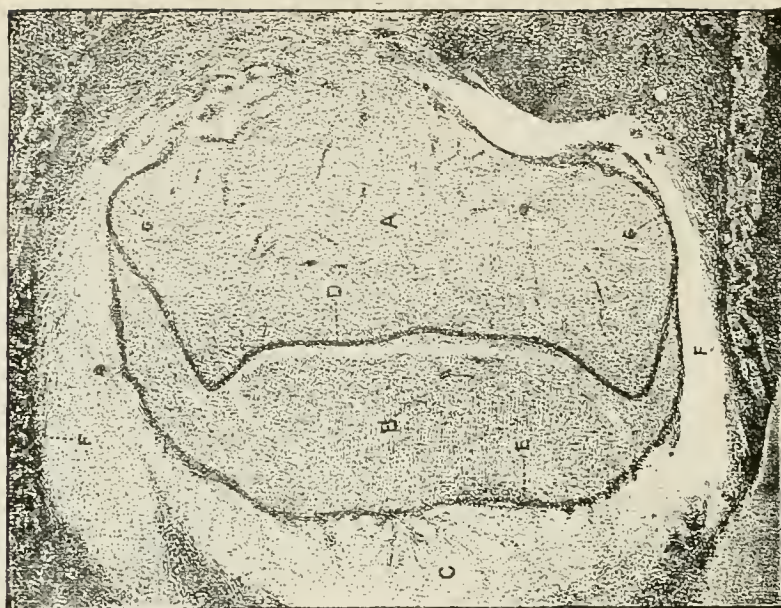
The changes above mentioned as occurring in these two investments might with some show of reason be accounted for as due somewhat to mechanical influences. For instance, the outer wall (E—Plate 3) in assuming its convex form in which we now find it would, so to speak, be put upon the stretch. In consequence its cells would be forced into a horizontal position. On the other hand there would be a crowding together of the cells in assuming a concave form in the inner wall (D) thus maintaining their columnar form. These walls (D and E) or boundaries are said to be identical with the so-called "malpighian" layer of the epithelium, the columnar cells of which (D) are here transformed into "ameloblasts," or enamel forming cells.



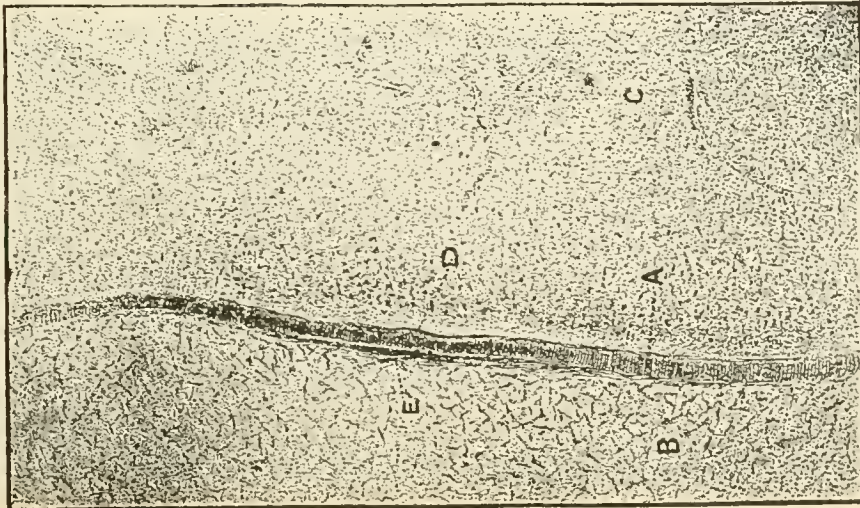
No. 1. X 75.



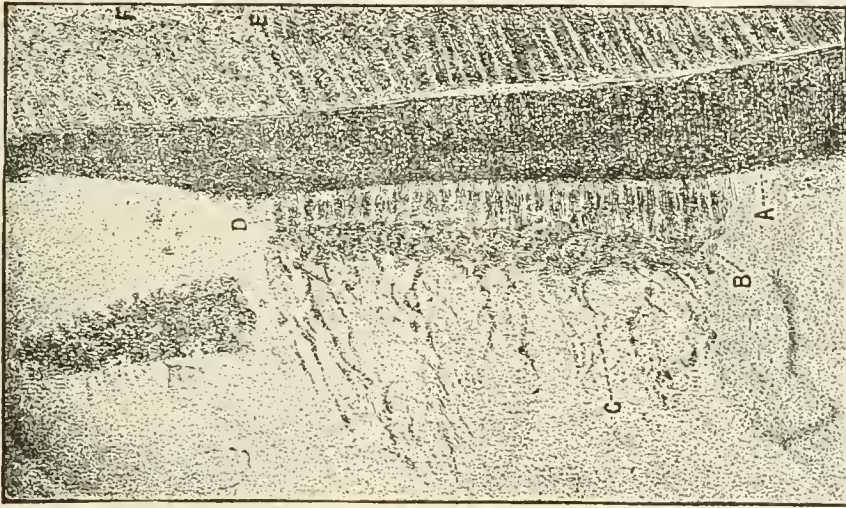
No. 2. X 300.



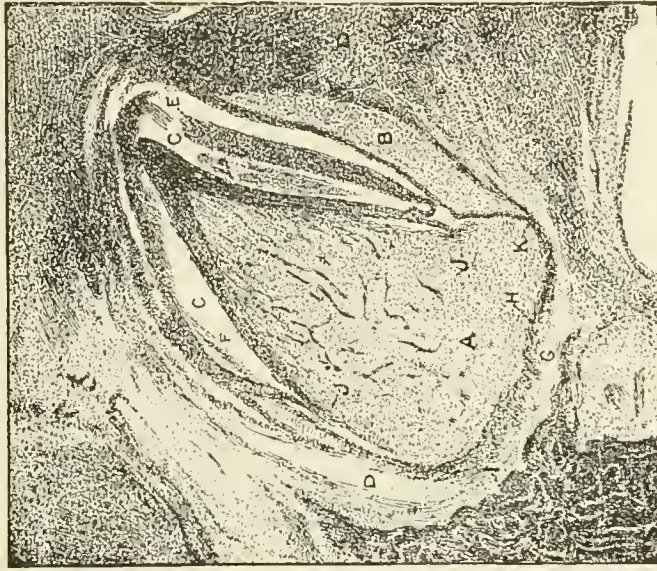
No. 3. X 50.



No. 4. X 300.



No. 5. X 1000.



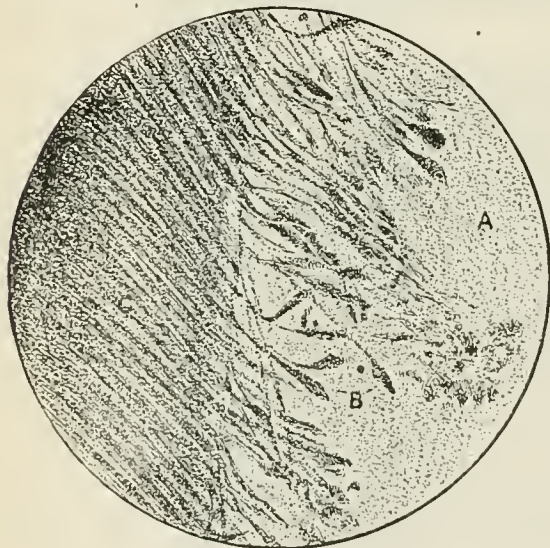
No. 6. X 75.

To ascertain, if possible, how far this is a fact, let us examine a little into some of the structural characteristics of the tissues here involved. The saculus, as before intimated, is the product of the surrounding embryonic tissue, and exhibits two well differentiated structures, the outer layer being composed of fibrous connective tissue elements of a somewhat loose texture, while the inner, or that in contact with the outer investment of the reticulum, is in structure much finer and contains a profusion of nucleated bipolar cells with long and highly refractive processes, and lying mainly parallel to the surface of the organ in the outer wall of which they seem to be interwoven and to connect upon the other side directly with the processes of the stellate cells of the reticulum. Again the processes of the cells form a like connection with those of the "stratum intermedium," and these last are seen to form true axial connections with the columnar cells of the ameloblastic

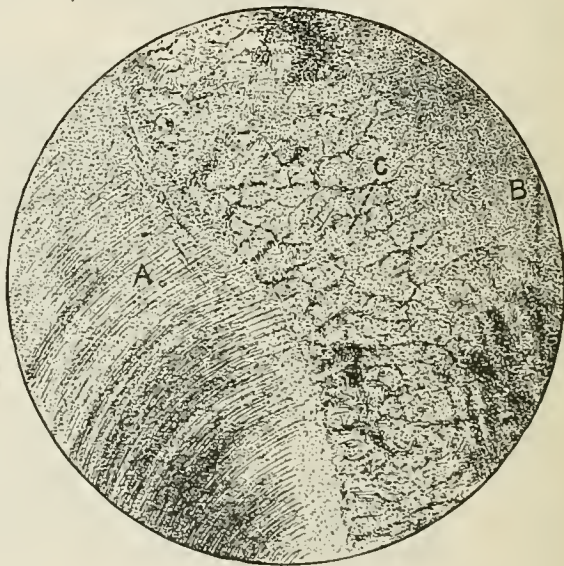
deated enlargements occur in them. Thus they become those columnar bodies known as "odontoblasts," to which we shall refer again further on.

We know that in these, as in the case of all the other tissues of the body, whatever elements are required for the work of building are derived from blood constituents. We know, also, that the enamel organ is *extra vascular*, the nearest approach of blood capillaries being at its outer investment (Plate 3, E) on the one side, and the dentine organ on the other. Therefore it is clear that such supply must come from the point first mentioned. The blood constituents passing through the reticulum, probably there receive such elaboration as fit them for their final place of deposit. Herein, then, consists the function of this stellate structure.

An examination of the section represented in Plate 3 shows that a change is in progress at the nuclei of the stellate cells in the immediate vicini-



No. 7. X 1000.



No. 8. X 500.

ity where a deposit of enamel is about to occur—noticeable as a *marked increase in size*. They now appear as highly refractive spherical bodies of an opalescent character. Coincidentally with or a little before the first deposit of enamel, two or more courses of these bodies make their appearance in the upper part of the matrix cells (Plate 5, D), where they have been termed the nourishing cells of the enamel organ. These spherical cells, or nuclei, are not, however, developed within the enamel matrix, but are identical with those of the reticulum (C), and probably constitute the calcific elements of the enamel. They, by some means, find way within the matrix cells where, superimposed one upon another, by some unknown law, coalescence occurs, thus forming the rods or prisms of the enamel, the matrix cell walls becoming the

layer, or, as we prefer to call it, the enamel matrix. (Plate 3, D). At the point of juncture of the cells of the stratum intermedium with those of the matrix they are joined by lateral processes. Sometimes two or more of these joinings are seen, thus forming those transverse lines which mark the upper boundary of the matrix cells, which are again joined at their lower ends where they come into contact with the dentine organ in just the same manner; and thus is formed the transverse line which marks the boundary here. And thus also is formed the supposed membrane lying between the enamel and the dentine, and which consists simply of a mesh or network composed of the lateral processes of the matrix-cells. These matrix-cells also send axial processes beyond this border line and into the dentine organ, where un-

cement substance between the same. In this we have a perfect explanation of the striated appearance of the enamel rods—an appearance that cannot be reasonably accounted for in any other way. It is a well known fact that by treating the enamel with alkalis, the rods may be divided into minute cubical sections just in the places where these striations occur. We submit, therefore, that each of these little sections represents an original spherical body or *nucleus* which was developed within a stellate cell of the reticulum.

Associated with the first deposit of the enamel, which occurs very nearly coincidentally with that of the dentine, another very marked change takes place, consisting of an increased density in that part of the reticulum lying in contact with the matrix cells (Plate 5, B). This occurs in consequence of the upward push of the growing tooth-germ, accompanied with the increasing enamel deposit, which now so encroaches upon the reticulum that it here becomes folded or gathered back upon itself, thus forming that line known as the stratum intermedium (Plate 5, E). In Plate 4 it will be noticed that this structure is not yet developed. In consequence of this folding back of this structure it may be presumed that the nuclei lying in the deeper parts of the organ are brought into more intimate association with the matrix cells, thus favoring their migration. Plate 5 gives quite a good illustration of this. Here a portion of the matrix (D), stratum intermedium (B), and the reticulum (C), have been torn out from the enamel organ and left attached to the already formed dentine (A). As a result also of the outward push of the growing tooth, the matrix associates with what remains of the reticulum, and its outer investment becomes an attenuated layer over the apex of the tooth, and gradually assumes that form over the whole crown as the process of deposit is completed. In this we have the *mythical* "membrane of Nasmyth."

At this stage the enamelization of the tooth is nearly completed; but the function of the organ, or rather what now remains of it, does not end here, as we shall see. In Plate 6 we have represented an embryonic deciduous canine tooth with its investments at about the above stage of development. In making this section the enamel organ and the layer of last formed enamel was torn from its position, making quite a space (C) upon the labial side. Upon the palatine side the enamel organ (B) is intact, but with a disarrangement of the last formed enamel (E); yet quite a thick layer still covers the dentine, distinguishable from the latter by its higher color (F). At the base of the rudiment is seen a dark knotted line (H) composed of vessels and capillaries to cross section. Here is the growing point of the tooth. It is at this point that the crown begins and at this point that the root is finished. Immediately below this point is the base of the sac-

culus, and in contact with that the forming jaw bone (I). We note that the line (H) is joined by the lower borders of the enamel organ (B), thus completing the circuit. At this point of juncture (K) the two walls of the organ are in mutual contact. A little higher up, at (J), is the cervical line of the tooth, where the enamel is to end. Yet we see that the organ extends quite a distance below this point; in fact, nearly surrounds the dentine germ. An examination of the section reveals the fact that the nuclei in the reticulum are not developed in that structure below the points (J). Therefore this fact, taken in connection with the general conformation of the parts, clearly indicates that at this point (J) the tooth crown is to be finished, and all below that is the developing root. And it is just as evident also that in its outward growth the tooth passes directly through the remains of what once was the enamel organ, and which now becomes the matrix for the cement substance of the root and the boundary line for the dentine of the same. Inasmuch as this deposit here begins much earlier than that of the cement, it is seen that such a boundary must in some way be provided.

Here probably ends the office of the enamel organ so far as developmental function is concerned. Its life's activities having been spent in erecting to past usefulness a monument composed of the most enduring tissue of the whole body.

The main distinguishing features between the dentine and the enamel are chemical and structural. The same chemical elements enter into the composition of both, but in different proportions. This fact alone would account for a variation in structure, yet aside from this there are other important reasons for this. As we have seen, a specific organ is employed in the production of each, each working in harmony with the other and both for the consummation of the final result. In view of this one would be led to suspect a similarity in their modes of working. In studying these structures the following differences of structure are most prominent:

1. That while one is interiorly absolutely non-vascular the other is decidedly vascular.
2. In one a matrix is provided as a receptacle for the deposit; in the other no such provision is made.
3. In one a reticulated structure is a prominent feature; in the other it is hardly noticeable.
4. In one the deposit occurs in a distinct and specific form; in the other it is semi-homogeneous.

Notwithstanding, however, these well-marked differences, which we believe have often heretofore led investigation wide of the truth, we are convinced that there is very little, if any, difference in the mode of working in each. The dentine organ, as before stated, is developed in, and probably from, the embryonic elements of the submucous tissue. Some time previous to its en-

velopment by the enamel organ a rapid development of blood-vessels occurs at its base. These shoot upward into its substance, rapidly becoming a dense and arborescent system. They run mainly parallel to its long axis, with numerous fine branchings as they approach its upper boundary, where they appear to end in loops. The substance of the organ appears as a granular mass—due to its somewhat dense cellular structure. Its cells are small, variously formed, and are joined by very delicate processes, thus forming another stellate structure analogous to that of the enamel organ and probably also with the same functional characteristics, although with a widely differing environment. Some time previous to the deposit of dentine there occurs what has been supposed to be a metamorphosis of the cells along the border line in contact with the enamel matrix, which now assumes the appearance of a columnar layer at these points. These bodies, the so-called "odontoblasts," as stated above, are only nucleated enlargements of the axial processes of the matrix cells of the enamel organ, which penetrate the dentine organ along this border and are again, by fine processes, joined to the deeper cells of that structure, thus forming a continuous system. The axial connections of these columnar bodies with the matrix cells form the "dentinal sheaths" or tubuli—their axis cylinders—the dental fibres. The branchings of the "tubuli" are a result of a fusion of two or more of these bodies. We are aware that all this is very unorthodox, *but so we see it*. In this connection we should ask a careful study of Plate 7. This section was made from a growing tooth. The space (A) was occupied by the dentine pulp. The "odontoblasts," so-called (B), are left attached by their long processes to the formed dentine. As represented here, their bodies often penetrate deeply into the dentine organ. As a rule, however, they lie nearly in contact with the line of deposit. The delicate processes at the free ends of these bodies by which they connect with the structural elements of the dentine pulp are torn away.

An examination of the dentine pulp at a time when the deposit is in progress reveals the fact of a profusion of granular bodies or nuclei quite similar to those of the enamel organ, which here as there, we may infer, constitute the calcific elements of the deposit. The reticulum of the dentine pulp is by no means as easy of demonstration as that of the enamel. Very careful manipulation and fresh unmounted specimens are the conditions of success in this direction. Plate 8 represents such a structure in the pulp of an adult tooth. Since, however, this occurs where there had been a secondary deposit, an abnormal growth is to be suspected.

Upon examining the pulp of a fresh specimen of growing teeth we find, adjacent to the inner extremities of the odontoblasts, a profusion of

the granular nuclei referred to above as constituting the elements of deposit. In just what manner this deposit is brought about is unknown; but the facts that it occurs in layers or laminae, and also that these granular constituents do not lose their identity in the new formation, are easy of demonstration. By treating the dentine with alkalis we may separate it into its component parts in just the same order in which they were put together. This we have demonstrated before.

The chemical difference existing between the enamel and the dentine seems more easy of a reasonable explanation. In the dentine organ exist just those conditions requisite to cause this difference. With its dense system of blood-vessels, enclosed in unyielding walls, are furnished the conditions for excessive blood pressure required for the passage of those elements (coloids), by transudation or otherwise, which makes this difference.

Since writing the above it has, through some subsequent observations, occurred to me—almost to the point of conviction—that in its inceptive development the dentine germ is indebted wholly to the enamel organ for the stimuli requisite for such a purpose. In other words, the enamel organ is the inceptor of the dentine germ.

We know that no tooth is developed without the predevelopment of such an organ. Even in that type of teeth which have no enamel the formation of an analogous enamel organ is the first inception. This is a fact which cannot be explained by the natural or other selection, or by referring to primitive forms. Its existence, therefore, under such circumstances, would seem to imply that of a necessity it must bear some significant connection with the formation of the dentine germ.

DR. M. H. FLETCHER: The paper we have just heard and the accompanying illustrations evidently represent the expenditure of much labor and time in their preparation. It is only those who are initiated and experienced in such work, that can appreciate the hours of research, and thought and reasoning necessary in such an investigation. In the whole subject of embryology, and the various phenomena connected with it, one will not find more natural barriers and difficulties to overcome in any branch than in undertaking the study of the dental system of animals. It has claimed much attention from our most learned and talented scientists, and is still involved in great obscurity. The most excellent paper just presented, clearly indicates a love for the work which would accomplish great achievements in this direction under favorable circumstances and opportunities.

The illustrations shown in connection with the essay, represent various stages of development

from the dipping down of the mucous membrane, to the development of both enamel and dentine. As to the time of this first appearance and dipping down, the essayist does not differ from other investigators. But the "dental groove," which he speaks of as not always being present, should be called the "dental ridge." Sudduth says on this point: "Concomitant with the formation of the ridge, the proliferation of the cells of the infant layer causes a depression of the subepithelial layer lying immediately underneath. Were we to lift up this thickened epithelial layer, it would leave behind a groove in the underlying tissue. But let it be remembered, that in lifting up the ridge or rampart of epithelial cells, we have made the groove. It is never a groove *per se* but, when formed, is always an artificial product which can be made at will." The "dental groove of writers," as quoted, is therefore now obsolete.

The essayist also says that at this period, "a change is seen to occur at certain points in the cells of the epithelium consisting of an enlargement of the cells and their nuclei, these points corresponding nearly to the position of the future teeth." This enlargement of the cells and nuclei at this stage has not, to my knowledge, been noted by other writers. But some authors speak of a proliferation of the cells, their size remaining the same until the dipping down of the cord has occurred, at which time some investigators have claimed also that the cells of the malpighian layer assume a columnar form. However, the latest investigations seem to show the cells of these layers to be oval or cylindrical shaped until the cord comes into contact with the dentine papillæ, and, after this occurs, they take on the columnar form and evidently become the ameloblasts.

The stirrup shape of the enamel organ spoken of is only the form seen on making sections of the tissue. As a matter of fact, the organ is bell-shaped, forming a hood over the dentine papillæ. It is spoken of as a cap, however, in another part of the paper. At this stage the doctor shows a section in which he claims that, "at the point where the enamel organ embraces the cervical portion of the embryonic tooth, the wall of this organ is folded upon itself, thus bringing both walls into mutual contact." (See Fig. 3.) So far as I know no other author has observed this. Other investigators represent this portion as free from such conditions as described. But since this is not a matter closely concerned in any part of the development it is not of great significance.

The important point in the paper, and that which has the greatest claim for originality, is the theory of the origin of the odontoblasts. After speaking of the numerous lateral processes given off by the ameloblasts or "matrix cells," he says: "And thus is formed the supposed mem-

brane lying between the enamel and the dentine, and which consists simply of a mesh or network composed of the lateral processes of the matrix cells. These matrix cells also send axial processes beyond this border line, and into the dentine organ where nucleated enlargements occur in them. Thus they become those columnar bodies known as odontoblasts." This certainly gives to the odontoblasts an entirely new origin, for they have up to the present been considered as a modification of the cells of the subepithelial tissue in like manner as the ameloblasts are a modification of the malpighian layer. The layer of cells at the summit of the dentine papilla, which come into nearest contact with the enamel organ, are the ones thus converted into odontoblasts.

To claim that any lateral process of a cell becomes nucleated and forms a cell of another class is certainly a perversion of the laws of morphology to some extent; for it would seem that if there are any truths established in this branch of science it is that, when nucleated cells divide, the division of the nucleus—as a rule at least—precedes that of the whole cell. If the doctor could show that the matrix cells generate a second nucleus which passes through this basement membrane, then it would add greatly to the rationality of his theory. The development of the cell, however, is a gradual process from a general to a special state. We can conceive how the subepithelial layer, in the process of differentiation, might develop from the epithelium, or the reverse. But the processes of amelification and dentification are, according to the essayist's own definition, quite different, and, in consequence, would require different kinds of cells—at least, sufficient difference to need the step from epithelial to subepithelial structure before these cells could be converted into organs differing as widely as the enamel organ and the dentine organ. Then, too, in this particular case, there is a great chance of error, for these processes are extremely hard to trace. Legros and Magitot say in regard to the process of the stellate cells: "It is a remarkable fact, that no line of juncture can be discovered where these cells are connected with each other, the various reagents failing to disclose the least trace of it." And this certainly holds good with regard to any processes given out by the ameloblasts at this stage. Nevertheless, this new theory does credit to its author and possibly may be true. But the chances are against it.

The fact that the enamel organ is to be universally found in the earliest stages of tooth development, even in that type of teeth which have no enamel, is not proof of the truth of this theory. For it is certain that many cells act catalytically on their environments. It is therefore not improbable that this action is the influ-

ence given out from the enamel organ, and is necessary for the incipient development of the odontoblast layer.

Reverting to the subject of the enamel organ, we may say that the description is good of the manner in which enamel is probably formed by the "subsuperimposing one upon another of the spherical cells, or nuclei from the 'stratum intermedium,' within the walls of the matrix cells." And also that the lateral processes of the cells and the cell walls may form the boundaries to the enamel prisms. One illustration (No. 6 B) shows the enamel organ with its stellate reticulum to be present over the particular part of the tooth in which the enamel is being deposited. But Sudduth claims there is no deposit of enamel until the reticulum disappears. The illustrations, if properly understood, would disprove Sudduth's theory on this point. That the remainder of the enamel organ form Nasmyth's membrane seem to be pretty well established. But the essayist seems to look upon the existence of this membrane as a myth.

The doctor would make this enamel organ a most versatile affair. For according to his theory it first prepares and forms the enamel, then gives the necessary cells to the dentine organ. Without it he thinks dentine could not be produced. And before it ends its existence he has it enclosing the root of the tooth, and producing the cement which is much less like enamel than dentine. This latter function of the enamel organ is certainly a new one, and it will be difficult to maintain the premises upon which the doctor's conclusion in this connection is based. Since cementum assumes so nearly the form of bone, the two processes of formation must be very much the same, and consequently produced by similar organs. Cementum is claimed—and most properly—to be a subperiosteal product stimulated into growth by the same causes that effect the formation of subperiosteal bone. The difference between it and true bone is possibly due to the confined limits in which this tissue is necessarily deposited. Since the periodontal membrane, according to Sudduth, has the special superintendence of this deposit, and is simply a continuation of the periosteum. The modification compared to bone can be accounted for easily in the manner described. But what part the enamel organ can possibly have in the production of cementum, either primarily or secondarily, is not easy to see. Moreover, the tissues necessary for the production of enamel are not at all necessary for the production of bone or cementum.

As to the source from which the cords of the permanent teeth are derived authors differ. But the latest investigators almost universally believe that the cords for the twenty anterior permanent teeth are developed from the cords of the twenty corresponding temporary teeth, instead of from the epithelium as the essayist thinks, and the cord

of the first permanent molar from the epithelium, that of the second molar from the cord of the first, the second in time giving off a cord for the third and last tooth. There are specimens showing deviations from this rule, but they seem to be mere irregularities.

In closing my remarks I deem it just to say that since there is no standard in this matter, on account of the extreme difficulties surrounding such minute investigations, all that we can do is to compare the work of the essayist with that done by other late investigators. The training and labor necessary even to follow the steps of the established processes and phenomena in this work are not small. And when one has become so familiar with the microscope and the preparation of specimens that he has perfect mechanical familiarity with his work, then comes the original work which he must undertake. But just here we meet with our greatest difficulty, for we have reached the limit of our appliances and reagents. We can now only let the imagination go on and, reasoning from homologies and analogies, form theories and try to establish them. As improvements may hereafter be made in our means of investigation our theories must stand or fall as they are found to be based upon facts or fiction. And it must be remembered that these improvements are generally brought about by the discoveries and the demands of just such faithful workers as our essayist. To him therefore are due the most hearty thanks of all interested in this or in kindred work.

ARE "MEMBRANOUS CROUP" AND DIPHTHERIA IDENTICAL? YES.

Read in the Section on Diseases of Children at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY I. N. LOVE, M.D.,
OF ST. LOUIS, MO.

Since the first paper of Bretonneau, about 1821, at which time our real and definite knowledge of diphtheria had its beginning, down to the present time, the question which forms the subject of this paper has not been decided.

Earnest students and careful observers have answered affirmatively and negatively. I shall not fatigue my hearers by collating the expressions of writers who have accepted one view or the other. I shall present my own opinions based upon a deliberate weighing of all the evidence presented by trustworthy and thoughtful witnesses, and personal clinical observation extending over a period of eighteen years in hospital and private practice.

During the earlier years of my professional life I was uncertain in my position; after reading the views of Virchow, Cohen, West, Flint, and others as able, I was inclined to take a position in the

ranks of dualists. Severe scrutiny of the products of the pen of Bretonneau, Traube, Barthez, Sanné, and the tribe of unicists, left me inclined to favor their position, but special clinical opportunities and additional arguments of later watchful workers and able annalists like Jacobi and Struempel have enabled me to crystalize my convictions and prompted me to take a position positive and pronounced in favor of membranous croup and diphtheria being identical.

While it may be true, as Hilton Fagge has observed, that the more our knowledge of disease advances the more our distinctions and subdivisions multiply, yet the tendency toward unnecessary multiplications and distinctions without differences should be guarded against most carefully.

Dermatologists have given us half a dozen different terms to be applied to the different forms or expressions of erysipelas when, as a matter of fact, we know that, pathologically speaking, they are all one and the same disease, dependent upon the same germ and only varying in degree, action, or manner of announcement.

So too with fevers, the same disposition was manifested, as was illustrated when for a time typhoid fever, plus malaria as a complication, permitted the new coined term, "typho-malarial fever," to take its place in our nomenclature.

Whether the membrane, as in the so-called true croup, be a fibrinous exudation, superficial and easily stripped from the surface, leaving a smooth mucous surface, only robbed of its epithelium, while that of diphtheria is more of a coagulation penetrating or poured into the mucous tissue—a necrosis, as it were, in which the discharge can be removed only with great difficulty—is not important, it being largely dependent upon the anatomical characteristics of the parts involved.

That the disease is due to a special germ or microorganism, is admitted, and the recognition of this pathological point in the treatment has made a much more favorable showing in the mortality reports.

The growth and development of seed depend much upon their individual virility, favorable soil and surroundings. The expression of every disease varies with the individual victim, and is largely affected by its environment, favorable or unfavorable. A. may have typhoid fever so mild as to lead his physician to fancy he has in hand a simple case of continued fever; an attack of scarlet fever so simple as to be almost frivolous to the unwary; an assault from the dreaded Asiatic scourge—cholera—so mild as to take the form of a gentle intestinal relaxation; an erysipelas suggesting an erythematous flush; a small-pox with pustules few and far between, and little systemic suffering, while B. in the same ward may fall a victim to typhoid, typical; scarlet fever, severe and superbly perfect; cholera, classical, and collapse prompt; erysipelas so excessive as to en-

danger life and occasion an amount of suffering indescribable, and a variola so virulent as to promptly kill, or leave its victim marked in visage repulsive. This being so, then why should not A. be as likely to have diphtheria in a manner so moderate and superficial as to be almost overlooked, and B. so pronounced as to be fatal before the local expression could be observed.

Diphtheria selects by preference the pharynx rather than the larynx. The tonsils are a favorite site for the infection, not alone because of their prominence, but also because, as has been demonstrated, there is frequently to be found an interruption or break in their protective epithelial covering, and also owing to the fact that they are frequently in a vulnerable condition owing to previous or present inflammatory conditions. Then again, pavement epithelium is much more susceptible to attack than the ciliary variety, the latter being a higher grade of organization, of a more complex character, and possessed of greater ability to oppose aggression. When diphtheria attacks the larynx and trachea, which it does, fortunately, very rarely relatively, owing to the ciliary covering being less easily penetrated by the bacillus (possibly the tubercular bacillus makes a primary attack upon this point so seldom for the same reason), the free distribution of mucous glands which flow freely creating an exosmosis rather than an endosmosis, antagonizing absorption and impeding the peril of the adjacent tissues and destructive necroses of the same. At the same time the secreted mucus aids in throwing off the exudations from the surface, and the same causes are an explanation of the failures of the lymphatics of these structures to take up the infectious matter—hence laryngeal and tracheal diphtheria are largely local and unaccompanied by constitutional symptoms and would be a really mild expression of the disease were it not that for mechanical reasons life is endangered.

For similar reasons the circumscribed patches of diphtheria membrane upon the tonsils frequently covering them in their entirety, or their opposing surfaces, are unaccompanied by much constitutional disturbance; glandular involvement, etc., are mild manifestations of the disorder, and by practitioners who intemperately assert that death is the only evidence deciding in favor of a diagnosis of diphtheria, are no doubt sometimes placed in line with non-infectious diseases.

The structure of the mucous membrane, its different elements, as the epithelium, basement membrane, underlying connective tissue mixed with elastic fibres, the blood-vessels, nerves, and gland ducts, all affect materially the pathological plan of action locally and the general involvement. The free flow of secretion from the membrane lining the larynx and trachea, and the nasal cavities favors the separation and ready expulsion of organized exudates, but the difference in the ad-

jacent tissues is manifest in the varying systemic poisoning; in laryngeal and tracheal diphtheria, Bowman's membrane forms a barrier to ready absorption, while nasal diphtheria is deadly dangerous, due to the large number and size of the lymphatic ducts of the Schneiderian membrane, as well as their perfect communication with the lymphatic glands of the neck, all aiding ready entrance into the circulation.

The urine being free from albumen in the majority of cases of croup, is cited as an argument by the dualists to sustain their position, but even granting the fact, it is explainable by reason of the constitutionally mild character of the attack, if the larynx be primarily involved, and the large mortality preventing a fair comparison and complete determination of presence or absence of albumen. The frequency or infrequency of subsequent paralysis presented to prove their position as dualists can be met by the same answer as the above. A very interesting discussion of this subject occurred in the Louisville Clinical Society, January, 1888, and is reported in the *American Practitioner and News*, of February 4. An exhaustive aggregation of arguments from the dualist standpoint are presented by Dr. John A. Ouchterlony. Dr. W. Cheatham, of Louisville, by request of Dr. Ouchterlony, looked up the authorities for the other side and admirably arrayed them in the service of his friend, and he acknowledges that the resulting article comes very near making him a unicist. If there be a difference it is far from clear to his mind.

The argument that the suddenness of the attack and absence of a period of incubation separates croup from diphtheria, is properly met by the statement that examinations of the pharynx and nasal spaces are frequently insufficient, and the mild prodroma which would of necessity occur in primary laryngeal or tracheal diphtheria would probably be overlooked. I suspect that if the majority of cases of croup could tell their own story they would relate the fact that a complete examination, with full illumination of all the available mucousterritory had not been made, and that intelligent and persistent interrogation might have revealed a history of slight loss of appetite and discomfort in swallowing difficult morsels for several days before.

To illustrate this point, I recall three cases of croup, so-called, within my knowledge during the past six months. One case will illustrate the three. Sent for to see a child 4 years old, said by parents to have sore throat, and feared diphtheria; not being in office some hours elapsed and call was cancelled. A few days later mother informed me that she had treated the child with medicine ordered for a neighbor's child with diphtheria, and had countermanded the order for me to call fearing her house would be placarded, and her business—the supplying of the neighbors with

milk—ruined. Five days later I was summoned in the night, but being out another physician was called. Two days later I was called in consultation and found the child dying from pronounced laryngeal diphtheria. Intubation or tracheotomy was offered and rejected. The child died a few hours later and a certificate was given by the attendant giving croup as the cause of death.

The mortality records show an enormous increase of deaths from croup (?) during an epidemic of diphtheria.

One fact which is worthy of notice, and which is an additional argument in favor of the identity of the two diseases, is that the classical treatment for croup has for years been the free exhibition of the mild chloride (coupled with stimulation), with a view to its defibrinating effect. The secretory system has thus been stimulated, and the effect has been to favor the moistening and exfoliation of the exudation and antagonize the disposition to constitutional involvement.

Since the same plan of treatment has been applied to general diphtheria the tendency has been to the securing of a similar result, and the mortality reports present a more favorable showing. By the prompt recognition of the first appearance of diphtheria, and the immediate institution of imperative interference in the shape of free purging with mild chloride, local antiseptics rendering the infectious matter innocuous, and the continuance of constitutional measures which are germicides and stimulators of glandular action, first on the list being the bichloride, benzoate of soda, and large quantities of water, we can without doubt claim accomplishments that are tangible and positive.

I feel strong in the conviction that "croup" and diphtheria are one and the same disease, and that the teachings of pathological anatomy, as well as the clinical symptoms will justify no other conclusion.

3601 Lindell Boulevard.

A NEW METHOD OF TREATMENT OF DISEASES OF THE URETHRA, BLAD- DER, UTERUS AND RECTUM— DRY MEDICATION, DRY SYRINGE.

Read in the Section on Surgery and Anatomy at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY ELMER LEE, M.D.,
OF ST. LOUIS, MO.

It is only the fact of defect, or lack of perfection, that permits of progress. Absolute perfection is not attainable. Evolution in medicine as in every other thing promises only progress. But it is a moderate forecast that asserts the certainty that diseases will be mainly conquered, life made more comfortable, and a man's life extended be-

yond the fixed limit of three-score years and ten. The industry of men everywhere enduring and endeavoring to discover means and methods of curing diseases of the race is great as it is noble and good. The probability is that, ere long, some great discoveries will flash out that will expedite progress. I bring my contribution, much or little, valuable or worthless. Perhaps it may help some other one to go a step further.

The urethra of the male is a passageway chiefly concerned in carrying urine from the bladder, having a length of some 23 cm. (8 or 9 inches) between the meatus and the bladder. The size of the urethra is 6 mm. ($\frac{1}{4}$ inch) in diameter, slightly less at the outer end, slightly more at the inner end. Mucous membrane lines the channel throughout, which is continuous with the inner coating of the bladder for urine and the kidney. The diseases of the urethra are similar to the diseases of mucous membranes elsewhere in the body. Inflammation of the urethra may be produced by one of the following causes: 1. Repeated mechanical or chemical irritation; 2. Catching cold; 3. Toxic and miasmatic infection. There is an endless number of known and unknown septic poisons of which many, if not all, have a specific inflammatory action.

My paper is especially concerned at this time with a method of treatment of mucous membranes of canals and cavities accessible to surgical aid. The male urethra is the seat of frequent inflammatory disease, and infection is the common cause, and the diplococci or gonococci of gonorrhœa the

thetic, but the prime question is, how to use the drugs with effect and without harm to the unfortunate patient.

I think it is a matter as to how, more than as to what, to use. My method of treatment of diseases of the urethra is as follows:

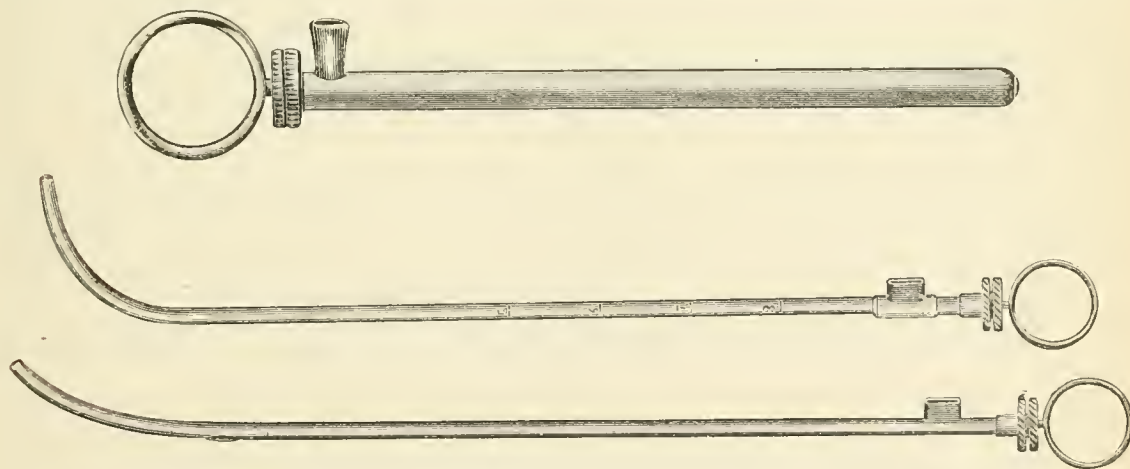
1. The employment of alkaloids, salts of alkaloids, glucosides and pure chemicals, in the dry state.

2. The active principles are in the form of granules or small masses mixed with pure cane sugar, and as soluble as the nature of the active agent will admit.

3. The placing of one or more granules at a dose, whether for purposes antiseptic, disinfectant, anæsthetic, astringent, and so on, in the precise region of the disease, and leaving the medication just where it is deposited. As it melts and dissolves and mixes with the secretions the tract or region of tissue will be bathed as the substance finds its way over their surface.

4. The use of instruments adapted for the purpose of carrying the granules in.

The matter of the selection of the medication is in the hands of the surgeon to use that which he may. The form of the remedy is convenient, the dose is accurate, and the method of introducing it into the channel of the urethra, the bladder, the cavity and neck of the uterus and the rectum is clean, economical, elegant, effective and simple. The warmed and oiled instrument is carried down into the urethra until the end defines the inflamed patch, and this it does with ac-



most common cause. The treatment of the urethra for gonorrhœa and other inflammations concerns a vast number of persons.

The methods of treatment are numerous. It is to day, in the light of science, not a question so much as to what remedy or drug is required to destroy the cocci and other bacteria, and which drug is a good disinfectant, and which an anæ-

curacy, when the granules are deposited in the urethra and the instrument withdrawn. The size of the granule is such that only the slightest, if any, irritation is caused. There is absolutely no distress as is the case with bougies of gelatine and masses of medicated gelatine and cocoa butter, and so on. The strength of the substance of the granule will determine as to how many to use for one

dose. A single granule of corrosive sublimate of 1 millig. ($\frac{1}{80}$ grain) is equivalent to a teaspoonful of a sublimate solution of 1:2000. Of granules of iodoform, iodol, hydro-naphthol, thallin sulphate and cocaine hydro-chlorate, as many may be deposited as may be needed in the judgment of the surgeon. The solubility of the granules *in situ* is considerably increased on account of the acid secretion of the mucous coat.

In the urethra the salts of alkaloids dissolve in three to six minutes, the alkaloids take a little longer, and the pure chemicals in three to six minutes. The medication is in a form so small and even when mixed and dissolved in the acid secretion, is inconsiderable in volume, a condition which favors thorough medication, in that the whole substance is retained on the mucous surfaces and not expelled as it would be if it were of a solution injected, or of such bulk as would cause distress to the urethra and expulsive contraction in the uterus.

A few days before I left home, my neighbor, Dr. Steele, used the uterine douche and a solution of boric acid in the case of a patient, the object of which was to disinfect the cavity of the uterus of some petrifying *debris*. Some particle of substance was forced into a venous sinus thereby, partial collapse ensuing quickly, which was with extreme effort overcome. Dr. Steele said to me, "Would the *granules* of boric acid not have been equally efficient? I think they would. And would there have been the same risk to life? I think not."

The granules are made of the active principles and pure chemicals and contain absolutely no irritating material. The size of the granule is not to be more than 3 mm. ($\frac{1}{8}$ inch) in diameter, for obvious reasons, and will contain of substance 1 centigram ($\frac{1}{6}$ grain), 1 milligram ($\frac{1}{80}$ grain), and of a few substances $\frac{1}{2}$ milligram ($\frac{1}{160}$ of a grain). The alkametric granules of Frederick Stearns & Co., of Detroit, made chiefly of Merck's pure crystalline salts, are suitable for my method. Also, the dosimetric granules of Chanteaud, in such high favor in France. The granules of the Metric Granule Co., of Chicago, are especially suitable by reason of the uniformity of size of the granule.

I have devised three instruments, which I will presently exhibit to you, as well as my method upon a patient. The short, straight instrument, consisting essentially of a plunger and barrel with its adaptation to a new application, is, through the kind suggestion of my friend, Dr. C. H. Hughes, christened a "dry syringe." It is applicable to the urethra and rectum. The second instrument is 25 cm. (10 inches) long, and consists of a tube and a flexible piston rod, with the proper curve to pass into the deep urethra and bladder. The third instrument is a modification of the dry syringe for the urethra, and is applicable to the

uterus and cervix. The dry syringe for the urethra is for the patient to use under instruction from the surgeon and may be prescribed or supplied to his patient by the physician. The dry syringe for the bladder and uterus are, of course, only safe in the hands of the skilful surgeon.

The time since receiving my dry syringe from the maker was too short to do more than demonstrate the mechanical features of this method. At the next meeting I will bring the results before you of a year of clinical experience with the dry syringe and granules of pure substances in the treatment of diseases of mucous membranes of the pelvic organs.

316 North Ewing Avenue.

THE CARBON COMPOUNDS.

THEIR TRUE PLACE IN THE TREATMENT OF FEVERS—OR THE PARTICULAR TYPES OF FEVER IN WHICH THEY ARE INDICATED—WITH SPECIAL REFERENCE TO THE EMPLOYMENT OF AMMONIUM SALICYLATE IN THE TREATMENT OF TYPHOID FEVER.

Read before the Virginia State Medical Society, at a Meeting held in Norfolk, Va., October 24, 1888.

BY S. K. JACKSON, M.D.,
OF NORFOLK, VA.

The older members of this Society may remember that about fifteen years ago (1873) I had the honor of presenting a paper entitled "Some Points in the Pathology of Typhoid Fever which Furnish Indications of Treatment," in which I suggested a plan of treating that disease differing greatly from those usually pursued. I think it due to the Society that it be kept informed of the history of a suggestion in which some interest may be felt, from its having been first made on this floor, and which has since attracted considerable attention.

My object now is, not only to fulfil this obligation, but also to comment upon a modification which has been proposed. And this will lead us to a discussion of the true place of the carbon compounds in the treatment of fevers, and to show that their selection is of much consequence, and becomes almost a matter of mathematical calculation, while their effects can be ascertained with almost mathematical certainty.

The favorable reception of the paper alluded to induced the editor of the *Virginia Medical Monthly* to solicit another for his journal, with fuller details of treatment and reports of cases in which it had been used. These papers evoked a large correspondence; probably necessitated by some unfortunate typographical errors. After correcting these as far as possible by letter, and after the lapse of some ten years, I felt that the results of maturer study and more extended experience should be laid before the profession; and this desire culminated in a paper on the "Ammonia Treatment of Typhoid Fever," read before the

Section of Practice of Medicine, at the meeting of the American Medical Association in Washington, in 1884. This paper was published in *THE JOURNAL* in August of that year—vol. iii, p. 183.

At the solicitation of the editor of the *Physician's Magazine*, this paper was supplemented by another giving reports of cases showing the effect of the sedative salts of ammonia in reducing temperature, and which was published in vol. i, p. 32, of that journal. Numerous letters, some of inquiry, some reporting experiences, some expressing grateful acknowledgments, poured in from all quarters. *THE JOURNAL* in an editorial called attention to the original paper by a kind and favorable comment, and then again on October 10, 1885, gave an abstract and recommended a re-reading of it. My object in making these allusions is merely to show the amount of interest awakened in the subject.

These notices were followed by an exceedingly interesting paper by Dr. J. R. Barnett, of Wisconsin, relating some cases in which he had employed, with the most gratifying results, the treatment as proposed by me, and then giving an account of his experience with a modification of it suggested by himself, viz.: the substitution of ammonium salicylate for those salts of that base which had been proposed and used by me (*THE JOURNAL*, December 11, 1886). This drew from the pen of Dr. J. D. Sullivan, of Brooklyn, N. Y., a paper read before the Fifth District Branch of the New York State Medical Society in May, 1887, and of which a reprint was subsequently published in pamphlet form, giving a report of cases in which he had used Dr. Barnett's modification. This elicited from *THE JOURNAL* (August 6, 1887, p. 179) another complimentary notice of my paper, with the declaration that it would repay a re-reading.

Dr. Sullivan's paper was followed by a paper by Dr. D. M. Wick, of New Hartford, Iowa, published in *THE JOURNAL*, vol. x, p. 164, February, 1888, giving some interesting cases in which he had employed the ammonium salicylate.

The next paper on the subject which has come to my notice, is in course of preparation by Dr. E. S. Ellis, of Manistee, Mich.

The last two numbers of *THE JOURNAL* (September 29 and October 6) contain another elaborate paper by Dr. Barnett, entitled, "The Antipyretic and Abortive Treatment of Typhoid and Remittent Fevers," in which he condenses all that has been written on the use of ammonium salicylate in fevers.

While these several papers manifest an appreciation of the nitrogen compounds in the treatment of those fevers akin to typhoid, they fail to make distinction between this class of fevers and those of malarial origin, and thus ignore the fundamental principle upon which this treatment is based;

and the object of this paper is to show the necessity of this differentiation; for, while the carbon compounds are essential in the one class, they are of no account in the other—that, though they are required in malarial or bilious fever, typhoid fever and fevers of its class as imperatively demand the nitrogen compounds; and as the ammonium salicylate combines the two classes of remedies, it is more properly adapted to that form of fever which seems to be a compound of both classes.

As to the efficacy of this agent in the septicæmic fevers, it is not my purpose now to discuss.

As an analysis of the cases reported by the several gentlemen will confirm the positions for which we are contending, let us glance hurriedly at them.

The cases in which Dr. Barnett reports having tried the "ammonia treatment," and with marked success, were probably true typhoid fever, while the first in which he used the salicylate was, as he says, remittent fever. Several similar cases followed and, being *similar*, must have been of malarial origin. The next was a case of puerperal septicæmia; the next was of the same nature. Then followed some dozen cases, a majority following early abortions, in nearly all of which cellulitis was present. The next was gangrene of the lungs; next the septicæmic state of the last stage of tuberculosis—pneumonitis complicating other affections—next cerebral meningitis. Some twenty-five or more cases are alluded to, but not reported, of typhoid or allied fevers; but, as Dr. Barnett recognizes a close clinical relationship between these and remittent fever, we cannot know to which class they belong.

Dr. Sullivan's cases were mainly of erysipelas, septic cellulitis, puerperal septicæmia and the septic fever of tuberculosis. He had the opportunity of employing the salicylate in only one case of typhoid fever.

Dr. Barnett alludes to a paper by Dr. S. A. Fliesburg, of Hudson, read before the Inter-State Medical Association in July last, but as I am unable to procure it, have no means of knowing the class of cases reported.

Dr. Wick's cases are easily analyzed. He reports five, not one of which can be considered to be typhoid fever. The first he calls a remittent; the second remittent; the third measles; fourth atypical typhoid. The fifth was probably an intermittent.

Thus we obtain from these cases very little or no evidence of the value of the ammonium salicylate in uncomplicated typhoid fever.

While it has been a gratification to receive from practitioners in almost every State of the Union evidences of their interest in, as well as favorable reports of their trials of, the ammonia treatment of typhoid fever, as proposed by me and practiced with marked success for the past forty years, it has also been a matter of some surprise that so revolutionary a treatment, and one for which so

much is claimed, has not attracted the attention of our schools. Might it not be considered a duty they owe to the profession, either to approve suggestions worthy of trial, or to condemn such as are unsound in principle and likely to be harmful?

It may be that the learned professors of our colleges regarded, as Dr. Barnett was inclined to regard, the theories upon which this treatment was based as mere "vagaries;" but Dr. B. declares, as I had already shown, that they had borne "substantial fruit;" and it is reasonable to infer that a tree that could bear "substantial fruit" was not a myth, but a substantial tree. "A tree is known by its fruits." "Men do not gather grapes of thorns or figs of thistles."

Several of the journals have been furnishing us, lately, with details of the treatment of typhoid fever which is pursued by the most eminent and popular practitioners in the great medical centres of the country; but as these plans of treatment differ widely from that proposed by me, it is to be supposed that they are based on entirely different pathological views from those which suggested "the ammonia treatment." The correctness of these views can now only be inferred, until more accurate scientific investigation can be had, from a comparison of results. I have already reported my rate of mortality (which is less than 1 per cent.), and it would be interesting to compare it with that of the other modes of treatment. Dr. Barnett estimates the mortality by salicylate of ammonia treatment as 3 per cent. Of the others we have no reports.

As stated above, Dr. Barnett has proposed the employment of the ammonium salicylate as a modification of my treatment, and the object of this paper is to show to what class of fevers this valuable remedial agent is applicable, and why neither it nor any of its congeners are demanded, nor are particularly beneficial, in pure uncomplicated enteric fever.

In determining the treatment of a case of fever it is important to ascertain what particular form of fever we have to combat. We are not merely attempting to subdue the elevated temperature common to all fevers, but must aim our attack at the agency which has produced the pyrexia. If the former were our aim, the mere application of cold might effect our purpose; but if the latter, we must endeavor to ascertain the pathogenic cause, which, if as yet beyond our reach, can be studied as to its behavior, as to the conditions most favorable to its propagation, as to the agencies capable of destroying or crippling it, and as to the particular lesions caused by it. So far from recognizing any relationship, either "pathological or clinical," between malarial (that is remittent) fever and typhoid fever, I regard these two forms of fever as entirely and essentially distinct and possibly antagonistic—that they do not prevail in the same district at the same time; that they originate

from different causes and require different treatment. I think I am right in declaring these to be the views generally entertained by practitioners in malarious districts.

I have known some physicians to distinguish between them by testing the ability of quinine to control them or not, (a clumsy and unphilosophical mode of diagnosis) which, while distinguishing between the diseases, demonstrates at the same time their diverse character, as well as the fact that the most efficient means we possess for controlling malarial or remittent fever has no power in enteric fever.

While, in making diagnosis between these two classes of fever, I have not been puzzled by the "insensible shading" of which Dr. Barnett speaks, I admit the existence of a form of fever which really seems to partake of the characters of both. As every one who has read my previous papers on this subject will remember, that I was inclined to regard what is called "typho-malarial fever" as a disease *sui generis*, and due to a cause differing from that which produces true typhoid fever, and that I had considered these two forms of fever antagonistic, as stated above. But subsequent observation has inclined me to modify this opinion, having recently seen cases in which the malarial symptoms disappeared and left the typhoid symptoms uncomplicated, and *vice versa*. In a case just recovered the typhoid symptoms disappeared two weeks before convalescence was established. These hybrid cases, as I will show presently, are those in which Dr. Barnett's modification of my treatment is indicated. In these cases I have lately tried it with the most satisfactory results; but in pure uncomplicated enteric fever I have not seen, nor, for reasons which I have already given, did I expect to see, effects comparable to those of the other ammonium salts. These reasons are probably what Dr. Barnett considers "vagaries," but it is gratifying to know that the accurate researches of modern pharmacology are daily adding new facts confirmatory of them.

I do not know that any one contends, at this day, that the different forms of fever originate from the same cause—that the organism causing malarial fever was identical with that causing typhoid or yellow fever. This would be as preposterous as to suppose that small-pox and scarlet fever were caused by the same micro-organism.

In the account of his researches into the hæmatozoön accompanying, if not causing, malarial fever, Osler remarks: "It is very evident that we are dealing here with structures unlike any others which have been described in human blood, and with bodies which have no relation whatever to the spirillæ, micrococci, and bacteria of certain acute diseases." And Laveran declares that "these hæmatozoa have never been met with elsewhere than in the blood of patients suffering from malaria." These hæmatozoa are so distinct

from the typhoid bacillus in their morphology, in their habitats, in their life-history, in the food they require, in their excretions, in the lesions or effects produced in the human system, no one could suspect a relationship between them, or could suppose that the same toxic agents would be equally deleterious to both. Experience and observation have proved that they are not, and have demonstrated that quinine, the great antidote to the malarial poison, has no effect upon that of typhoid fever. This agent has been proved to be actually destructive of the micro-organism of malarial fever. Laveran declares that "he has never seen the peculiar hæmatozoön of malarial fever *after quinine has been taken*, and in order to find it, it must be looked for before any cinchona preparation has been administered." Has this ever been affirmed of the typhoid bacillus?

Whether the theory by which I attempted to explain the efficacy of certain means in these fevers be accepted or not, it is certain that the carbon compounds have more in conquering malarial, and that the nitrogen compounds are most efficacious in typhoid fever. To the former class belongs salicylic acid, and to the latter ammonium, and therefore the ammonium salicylate may be said to belong to both classes. Few practitioners would be willing to substitute salicylic acid for quinine in malarial fever, nor could I be persuaded to dispense with the doubly nitrogenous salt (nitrate of ammonia) for one with less nitrogen in typhoid fever.

The study of these carbon compounds is one of the most interesting engaging the attention of the profession; and by it some curious facts are being daily developed, which are strongly confirmatory of the theory I have advanced.

Brunton says of these carbon compounds "that their chemical nature depends on the arrangement of their constituent atoms, but their physical character depends on the number of atoms." He might also have said that their antipyretic, antiperiodic and antiseptic power increases with the number of carbon atoms which they contain. This rule, as far as their antiseptic power is concerned, is undoubtedly true, especially with regard to those organisms whose peculiar function it is to produce fermentative processes by which there is an exhalation of carbonic acid (CO_2). To see how far this assertion is justified let us glance at the series.

The lowest in the scale; that is, those with the smallest number of carbon atoms, are the alcohols, which are diffusible stimulants, evanescent in their effects. Methyl alcohol, the lowest (CH_3O), produces excitement quickly and runs through its stages rapidly. With ethyl alcohol ($\text{C}_2\text{H}_5\text{O}$) the stages succeed each other slower, but in regular order, and convulsive phenomena appear. Whereas in cænanthyl alcohol ($\text{C}_7\text{H}_{16}\text{O}$) and caprylic alcohol "the stages are irregular and confused and convulsions sooner occur."

While I have spoken of the lower carbon compounds (the alcohols) as *stimulants*, I do not wish it thought that I ignore the modern idea that they are such by destroying the normal balance between the inhibitory and excitor nerves, by paralyzing the former without directly stimulating the latter. This paralyzing effect seems to be in direct proportion to the number of carbon atoms contained, and the law for which I am contending confirms the modern theory alluded to; for, as we ascend the scale still further, the paralyzing or inhibitory effect is still more pronounced.

The next higher alcohol is amylic alcohol ($\text{C}_{10}\text{H}_{22}\text{O}$), from which the powerful agent nitrite of amyl is prepared, which "produces *paralysis of the nerves*" (Brunton).

The ethers and aldehyde each contain but two atoms of carbon, hence their action is rapid and not persistent. But paraldehyde containing $\text{C}_6\text{H}_{12}\text{O}_3$ "is a pure narcotic causing sleep, like chloral."

Chloral and chloroform, the one having two and the other but one atom of carbon, seem to be exceptions to this rule, but this small proportion of carbon may account for the evanescent character of their anæsthetic and analgesic effect, and also for their want of antipyretic and antiseptic power.

As we ascend to the aromatic series of the carbon compounds this fact becomes still more prominent. We then reach carbolic acid (phenol alcohol, $\text{C}_6\text{H}_5\text{HO}$), creasote, resorcin, and hydroquinone, all of acknowledged antiseptic power.

The next step leads us to salicylic acid ($\text{HC}_7\text{H}_5\text{O}_3$), which though admitted to be germicidal, Brunton says of it, "It is much less useful in typhoid fever, and although it has some antiperiodic action, it is not such a powerful remedy in malarial affections as quinine."

The next in order is chinoline ($\text{C}_9\text{H}_7\text{N}$), containing two more atoms of carbon. It is said to be a powerful antiseptic and antipyretic (Brunton). "It has been used in typhoid fever, etc., apparently with benefit," probably because of the nitrogen it contains.

Naphthol ($\text{C}_{10}\text{H}_7\text{OH}$) contains one more atom of carbon than the last and is said to have a therapeutic action on the skin, like tar, which is used with efficacy in several parasitic skin diseases. When absorbed it causes loss of consciousness and convulsions.

Turpentine, a generally recognized antiseptic, contains the same proportion of carbon ($\text{C}_{10}\text{H}_{16}$).

The next higher in the series is one of the newly-proposed antipyretics, whose powers in this respect are unquestioned, viz., kairin, containing C_{11} , or one more atom of carbon. It is a salt of ethyl (C_2H_5)—chinoline ($\text{C}_9\text{H}_7\text{N}$)= $\text{C}_{11}\text{H}_{12}\text{N}$. We next reach the still more powerful antipyretic, "antipyrin," with its fourteen atoms of carbon and two of nitrogen. This climax is surmounted

by the most powerful destructive agent we possess to the malarial microbe, viz., quinine, which contains twenty atoms of carbon ($C_{20}H_{24}N_2O_3 \cdot 3H_2O$).

A glance at this list will vindicate the assertion made at the outset, viz.: That the more atoms of carbon which an agent contains the more powerful is its germicidal and, therefore, its antipyretic effect. But this is only true, as we have shown, as far as the malarial poison and its congeners are concerned. For an agent capable of destroying the typhoid fever poison we must look to another class containing more or less nitrogen, which we have heretofore shown is the natural, or nature's antidote to that poison. The reasons for so considering it we will not repeat, but they are so cogent, and the success of the nitrogen compounds has been so decisive as to induce me to abandon all other means in the treatment of typhoid fever. No other reported plan of treatment compares with it in results, and it is not venturing too much to prophesy that it is destined to become the established treatment of this disease.

I hope I have succeeded in showing,

1. The necessity of a diagnosis between malarial and typhoid fevers, which is important on account of their different characters and their requiring different treatment.

2. That it is only the carbon compounds that are particularly efficacious in malarial fevers; as I have heretofore shown that the nitrogen compounds are demanded and are eminently efficacious in enteric fever.

3. That Dr. Barrett's suggestion of the use of salicylate of ammonium is particularly valuable in that hybrid form of fever to which Dr. Woodward gave the name of "typho-malarial," and not in pure typhoid fever.

4. That the carbon compounds generally are only indicated and could only be expected to be useful in those forms of fever which are due to a fermentative process caused by organisms exhaling carbonic acid gas, since they are chiefly destructive of this class of organisms and have little or no toxic effect upon those causing fevers which are accompanied by processes analogous to putrefaction in which ammonia or sulphuretted hydrogen are evolved, *e. g.*, typhus, typhoid, and the septicæmic fevers.

And finally, that these theoretical views exactly correspond with and are confirmed by clinical experience, as no agents have been found so efficacious in malarial fever as the carbon compounds; none more potent in typhoid fever than the ammonium salts; and probably none more valuable in septic fevers than the salts of sulphurous acid. And further, that this clinical experience justifies a reliance upon the use of these excretory products, viz.: carbonic acid, ammonia and sulphuretted hydrogen as agents for the destruction of the several organisms producing them, as being Nature's mode of inhibiting their life-processes, in

accordance with the law "that no organism can live in its own excreta," that is, in the product of its life-processes.

MEDICAL PROGRESS.

BINIODIDE OF MERCURY SPRAY IN TUBERCULOSIS.—DRS. MIQUEL and A. RUEFF have published a work on the treatment of pulmonary tuberculosis by sprays with the biniodide of mercury. The experiments of Dr. Miquel having shown him that the biniodide of mercury is microbicide in solutions of 1 in $\frac{1}{4000000}$, he was induced to try it against pulmonary phthisis, and this he has done in conjunction with Dr. Rueff. They have established spray apparatus at the Rothschild Hospital, and have submitted phthisical patients to the vapors of the biniodide of mercury, or rather the iodo-hydrargyrate of potassium. The following is the formula of the solution employed for the sprays: biniodide of mercury one part, iodide of potassium one part, distilled water one thousand parts, all by weight. But whether medicamentous liquids in the form of spray penetrate into the trachea, the bronchial tubes, and their ramifications is a question that has not yet been satisfactorily solved. Denied by some, this penetration is admitted by others, and appears to have been demonstrated by the experiments of Drs. Miquel and Rueff. It may, however, be observed, that of twenty-seven patients submitted to this treatment nineteen were improved, and eight remained stationary; the improvements were therefore at the rate of 70 per cent. In these cases attenuation of the pulmonary lesions was obtained, and particularly diminution of the expectoration and increase in the weight of the patients. In two cases even the disappearance of bacilli was established.—*Lancet*, Nov. 3, 1888.

TINCTURE OF PHOSPHORUS IN INFANTILE ASPHYXIA.—DR. FARICI has obtained excellent results in the treatment of asphyxia, occurring in the course of broncho-pneumonia in children. He advises the use of the following formula:

R. Cinnamon water 100 grams.
Ethereal tincture of phosphorus 8 drops.
Syrup of ether 20 grams. ℞.

The dose is a teaspoonful every hour.—*Lyon Médical*, September, 1888.

ENEMA FOR CONSTIPATION WITH HÆMORRHOIDS.—

R. Glycerine 60 parts.
Soap 10 "
Fluid ext. rhubarb 40 "
Essence of chamomile 10 drops ℞.

Use as an enema three times daily.—*Revue de Thérapeutique*, October, 1888.

THE
Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, NOVEMBER 24, 1888.

EDITORIAL CHANGE.

Having accomplished all that he had hoped or expected to accomplish when he accepted the editorship of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in 1883, and feeling the necessity for diminishing his responsibilities and constant work, the Editor of THE JOURNAL tendered his resignation to the Board of Trustees in the latter part of June last, the same to take effect on the 31st day of December, 1888. At a special meeting of the Board of Trustees held in Chicago, Nov. 9 and 10, 1888, the resignation was accepted, and JOHN B. HAMILTON, M.D., Supervising Surgeon-General of the Marine Hospital Service, and late Secretary-General of the Ninth International Medical Congress, was chosen unanimously to fill the place. He will enter upon the discharge of his editorial duties January 1, 1889. We trust he will have a long and prosperous editorial career.

AN IMPORTANT QUESTION.

"What will be the final effect upon the American Medical Association of the various associations of so-called *specialists*—the American Surgical Association, the Association of American Physicians, the Gynecological Association and all the others?

It will be a sad day for the profession of America when the time-honored A. M. A. ceases to be the medical institution of the country."—*New Orleans Med. and Surg. Journal*, November, 1888.

The question thus stated by our valued contemporary has been asked in a more private way by many of the more thoughtful members of the profession in all parts of the country. That many sincere friends of the American Medical Association, the true representative organization of the medical profession of this country, have looked upon the steadily increasing number of American associations of specialists with anxiety, lest they prove disintegrating and more or less antagonistic to any general and harmonious organization of the whole profession, is well known. And that some of those who have not only taken part in one or more of these specialist organizations, but have actively promoted the combination of all these in the so-called Congress of American Physicians and Surgeons, have been actuated by the desire that the latter should ultimately displace and supersede the American Medical Association, we have adequate evidence. There is now, and has ever been, in the ranks of the medical profession as in the ranks of all other educated classes, a limited number whose mental characteristics lead them to exclusiveness, or a decided disinclination to meet with the mass of the profession on a common platform. This comparatively small number, chiefly resident in the large cities, have never been satisfied with the liberal organization of the American Medical Association. They were represented in the Convention for organizing the National Association in 1846-7, and earnestly advocated a plan of organization that, while it would admit all regular practitioners of medicine to *nominal* membership, would restrict the whole business and management of the Association to a Council of limited number capable of self-perpetuation, instead of the representative plan based upon the State and local societies as reported by the committee and adopted by a very large majority. At a subsequent period, when the rapid development of specialties had commenced, it was this same underlying mental trait that prompted a few of those, in each, to meet by mutual agreement and organize *themselves* into an American Association under by-laws limiting the number to 50, 75 or 100 as the case might be, and making it impossible for any others to gain membership un-

less they were proposed and elected by nearly a unanimous vote of the existing members.

It is on substantially this narrow basis that the numerous American associations of specialists are organized, and every young specialist entering the profession, unless he has some influential friends among the members to propose him, and not a sufficient number of jealous rivals to *blackball* him, he must wait until he has actually achieved sufficient reputation to make his membership necessary to sustain the credit and influence of the association in order to gain admittance. In the meantime every important specialty is represented in the *Sections* of the American Medical Association, into which he can enter without the risk of being blackballed by rivals already in, and where he can mingle with all classes of the profession and have whatever communications or work of merit he presents spread before the profession generally through the columns of *THE JOURNAL*, instead of being hidden in an annual volume of transactions read by few except the members of the special organization before which they were read. The result will be that three-fourths of the young and ambitious specialists will continue to cultivate the acquaintance of the general practitioners by participating in the State societies and through them go to the American Medical Association and its Sections, and thus rapidly develop a National reputation in less time than they would have been kept in waiting to fill some vacancy in the membership of an exclusive specialist organization. Indeed, this result has already been demonstrated. During the last two or three years more work, and that of equally good quality, has been done in the several Sections of the American Medical Association than has been done in the National Associations of specialists.

And so obvious are the advantages of a wider publication of their papers, and their more direct personal contact with the general practitioners, upon whom the specialists must depend for much of their patronage, that very many of the ablest specialists who are active workers in the special societies, are equally active and influential in the Sections of the American Medical Association. Instead of the circle of American associations of specialists, accommodating in the aggregate less than 500 of the 50,000 or 60,000 members of the regular medical profession of the United States, having any serious tendency to supersede the

American Medical Association, it will only serve as a convenient and really useful place in which the small but respectable class of exclusionists can work and dine without personal contact with the sunburned and weatherbeaten general practitioners of the healing art.

THE HYPNOTIC ACTION OF SULFONAL.

Several articles have recently appeared on the action of this new drug, one of which, an inaugural dissertation by MATHES, is a very carefully prepared paper. He has administered sulfonal to tuberculous subjects, cardiac patients, patients with meningitis, acute alcoholism, anæmia, etc. In short, the drug seems to have been tried in all cases, without distinction, Mathes having previously found that it was harmless in certain quantities. His experiments showed that cardiac patients bore the drug as well as phthisical patients. The results of his experiments were that sulfonal had a complete hypnotic action 72 times in 100 cases, incomplete hypnotic action 9 times, and no effect 18 times; in 19 cases accessory manifestations were produced. In most cases it acted better the second night than the first—a fact that makes it much superior to morphine and preparations of opium. The accessory manifestations mentioned consisted in ringing in the ears, slight cephalalgia, giddiness, general fatigue, and in a few cases vomiting. There were, however, no cardiac nor respiratory troubles, and no modification of the appetite or digestion.

The conclusions drawn by Mathes are as follows: 1. Sulfonal is a useful hypnotic agent, though it is not always efficacious. 2. It has the advantage over other agents of having no odor, no taste, and no influence on the essential organs of life. 3. It caused disagreeable effects in only a very small number of cases; and the worst of them was usually insignificant. 4. The dose is variable, and depends on individual susceptibility. Generally a gram is sufficient to cause sleep without accessory manifestations. When these are produced the dose should be diminished. On account of its slow action it should be given at least an hour before the time for sleep. 5. When the insomnia is due to an irritating cough or to pains not clearly neuralgic, the use of sulfonal is contra-indicated. In most true neuralgias, on the contrary, it may be used with benefit.

The hypnotic value of sulfonal has been investigated also by Dr. G. Algeri, in the Asylum for the Criminal Insane at Ambrogiana, his results being published in a recent number of *La Riforma Medica*. Algeri gives records of fifteen cases of mental disease, mania, melancholia, dementia, alcoholism, etc., in which the use of sulfonal gave a calm and regular sleep. The quantity used was from 1.5 to 4 grams. The sleep produced was not accompanied by any alteration of the circulation or of respiration, and was on the average of five hours' duration. No case of disturbance of the stomach was seen, even when the maximum dose was given.

Contrary to the opinion of Algeri, Mathes agrees with Salgo in regard to the slight sedative action of sulfonal in mania and delirium. Garnier, in a recent article (*Progrès Médical*, October 13), thinks there is much promise for the use of the drug in the therapy of the insane, an opinion shared by Rabbas. Expert opinion, therefore, seems to vary but little in regard to the future field of usefulness of sulfonal. Cramer, Fränkel, Kast, Ostreicher, Rosenbach, Rosin, Schmey and Schwalbe confirm the results obtained by Mathes, and speak from personal experience of the remarkable efficacy of sulfonal in producing a sleep absolutely comparable with normal sleep. After a dose of from 2 to 3 grams this sleep lasts 5 or 6 hours without the least modification of the pulse or respiration, as mentioned by Algeri. All unite in declaring it superior to chloral, paraldehyde, and all other drugs.

DIAGNOSTIC BACTERIOLOGY.

WEICHELBAUM has recently shown, in two cases at the Rudolphus Hospital in Vienna, the great diagnostic importance of bacteriology. The first case was that of a workman who had suffered from articular rheumatism for fifteen days. The tibio-tarsal articulation was swollen, and the temperature of the patient was 40.3° C. After the administration of salicylate of soda the temperature fell, and the pains diminished, but soon took on their former intensity. After five days the left knee-joint became affected, and in a few days a small pustule appeared. The spleen was enlarged, and the inguinal glands engorged. Weichselbaum examined some blood taken from the finger, and found the bacilli of glanders. A few

days after this it was learned that three horses of the employer of the patient were dead of glanders. The patient died twenty-two days after entering the hospital. Weichselbaum found glanders-granulations in the skin, subcutaneous and intramuscular tissue, and in the lungs. It was discovered that the patient had not come in contact with the diseased horses, but he had used the blanket of one of them. It is probable, therefore, that infection took place through the respiratory passages.

The second case was somewhat different. A coachman came to the hospital with several ulcerated nodules on his face, neck, and extremities, muco-purulent discharge from the nose, dyspnoea, tumefied spleen, etc. These symptoms taken in connection with the man's occupation, lead to a suspicion of glanders. But when a bacteriological examination was made of the pus of the nodules, no bacilli were found; enormous quantities of the streptococcus pyogenes and streptococcus pyogenes aureus were found, however. The patient died in four days, and at the autopsy Weichselbaum found, besides the furuncles, œdema of the glottis and lungs, and a parenchymatous nephritis in the atrophic stage. The principal disease, therefore, was nephritis, and the furuncles and the nasal affection were secondary infections.

Weichselbaum has also seen two cases in which the anatomical diagnosis at the autopsy, could be made with certainty only by the aid of bacteriology. These were supposed cases of charbon. The patients were brought to the hospital in an unconscious condition, with paresis of the extremities, dilatation of the pupils, etc., and died in about two hours. At the autopsies Weichselbaum found hæmorrhages into the meninges, brain, and mediastinum, a serous exudation into the pleural and abdominal cavities, tumefaction of the spleen, etc. Charbon was suspected, but examination of the blood did not confirm this diagnosis.

EDITORIAL NOTES.

THE ITALIAN SOCIETIES OF HYGIENE will hold their next Congress at Padua in 1890.

A NEW SANITARY CODE has been adopted by the Italian Senate, and will be soon discussed by the Chamber of Deputies.

SMALL-POX is raging to such an extent in many

departments of Italy that the Government has decided to reorganize its vaccination service.

THE RELATIONS BETWEEN ALCOHOL AND RENAL DISEASES is the subject of a debate to be held before the Pathological Society of London on December 4th and 18th.

THE "GAZETTE MÉDICALE DE LIÈGE" is a new French weekly, of 12 pages, the first four numbers of which have been received. It is edited by Dr. Brasseur; assisted by Drs. Merveille and Roskam, and the physicians and surgeons of the hospitals of Liège.

UTERINE TYMPANITES, according to Braun, of Cracow, may be cured by injections of creolin, in a 2 per cent. solution. Braun relates two cases, in one of which labor lasted five days; the fœtus was in a state of putrefaction, and the mother's temperature 40° C., and her pulse 130. In spite of her serious condition the woman recovered.

COCAINE AND OLEAGINOUS SUBSTANCES, when combined, cause a great deal of pain, says the *North Carolina Medical Journal*. In view of the inclination to use vaseline or some such substance with cocaine, especially in operations on the urethra, this is an important point, which possibly has been noted by other observers than Dr. Wood.

THE ALKALOIDS OF COD-LIVER OIL have been investigated by Mourgues and A. Gautier. They describe two fixed bases which accompany the volatile alkaloids: aselline ($C_{25}H_{32}N_4$) from the liver of the *Asellus major*, and morrhaine ($C_{19}H_{27}N_3$) from the liver of *Gadus morrhua*. In the liver of the *Gadus* there are other interesting compounds.

THE NEW MEDICAL STUDENTS IN LONDON this session number 693, including 25 in the London School of Medicine for Women. The English Provincial Medical Schools, as far as heard from, have 201 students. And yet our British brethren complain of overcrowding of the profession, and that too many are rushing into the study of medicine.

DISINFECTION BY STEAM.—Budde has made some experiments to determine whether the tension and movement of steam have a real influence in disinfection, as Koch states. He finds that Koch is correct; that the destruction of the bacilli of charbon may be considered as certain proof of the

efficacy of a method of disinfection. Consequently, anything may be said to be completely disinfected if its deep and less accessible parts have been exposed for at least five minutes to steam at 100° C.

PETERSEN'S BALLOON FOR SUPRAPUBIC LITHOTOMY caused rupture of the anterior wall of the rectum in a case reported by M. Nicaise. An analogous case is reported by Hache. Nicaise's patient was 65 years old, and had already had seven or eight lithotrities performed. The balloon contained 340 grams of water, and the bladder 270 grams.

CHICAGO POST-GRADUATE SCHOOL AND HOSPITAL.—This recently incorporated institution will, it is thought, be opened at an early day. The following are the incorporators and faculty: Drs. N. S. Davis, Sr., J. Adams Allen, H. A. Johnson, A. Reeves Jackson, J. H. Hollister, W. H. Byford, C. T. Parkes, H. T. Byford, Frank Billings, L. L. McArthur, H. P. Newman, W. F. Coleman, F. S. Johnson, Børne Bettmann, Josef Zeisler, R. W. Bishop, Frank Cary, J. C. Hoag, Bayard Holmes, G. W. Webster, and Franklin H. Martin.

THE REPORT OF THE VIRGINIA BOARD OF MEDICAL EXAMINERS.—On another page in this week's issue of THE JOURNAL may be found a tabulated statement of the work done by the Medical Examining Board of Virginia from January 1, 1885, to October 9, 1888. It is to be regretted that we have no figures bearing on a larger number of students examined, and on graduates from a larger number of colleges. The figures given, however, are not without value, and we would call the attention to them of all who have any influence in sending students to the medical colleges of this country, and of all directly interested in medical legislation. Physicians of States that have no practice acts should show that table to the members of the Legislatures, and try to induce them to pass an act similar to the North Carolina or Virginia Acts, thus giving the people that greatest safeguard against incompetent practitioners—an efficient Board of Medical Examiners.

DEATH OF DR. HENRY B. SANDS.—Dr. Sands, the well-known surgeon of New York City, died suddenly in his carriage on Sunday afternoon, while returning from a visit to a patient. Dr. Sands was in his 59th year. He was graduated

from the College of Physicians in 1854, and immediately entered Bellevue Hospital as an interne. In 1857 he became demonstrator of anatomy in the College of Physicians and Surgeons, after serving in which capacity he was elected Professor of Anatomy. About ten years ago he was elected Professor of Surgery, his colleague being Dr. Markoe. At one time or another Dr. Sands has been connected with the surgical department of almost every hospital in New York. As a surgical anatomist Dr. Sands had but few equals, and as a surgeon he was successful and brilliant. He was a very rapid lecturer, which detracted somewhat from his value as a teacher. His writing was not very extensive, but all that he wrote was valuable. To see him operate was an unspoken clinical lecture. His death is a very great loss to the profession in this country.

SOCIETY PROCEEDINGS.

Medical Society of Virginia.

Nineteenth Annual Session, held at Norfolk, Virginia, Oct. 23, 24, and 25, 1888.

(Concluded from page 713.)

WEDNESDAY—EVENING SESSION.

Returning to the minutes in the regular order, as soon as the meeting had been called to order Wednesday night, October 24, prolonged calls were made by the audience upon DR. HUNTER MCGUIRE, of Richmond. Finally consenting to respond, he made an extempore talk on the

FORMATION OF AN ARTIFICIAL URETHRA FOR PROSTATIC OBSTRUCTION.

(See page 695).

DR. HUGH T. NELSON, of Charlottesville, presented his report as Secretary of the

MEDICAL EXAMINING BOARD OF VIRGINIA FROM THE ORGANIZATION OF THE BOARD, NOVEMBER 15, 1884, TO THE PRESENT DATE.

The Medical Examining Board of Virginia is composed of 32 members of the regular profession; 3 from each of the ten Congressional Districts of Virginia, and 2 from the State at large. These 32 members are nominated to the Governor for commissions, by the Medical Society of Virginia, to serve a term of four years. In addition, the Old Dominion Hahnemann Society nominates 5 homœopathic physicians, who are assigned to committees—thus in reality making the Board composed of 37 members.

Every applicant for license to practice medicine, etc., in Virginia since January 1, 1885, who had

not previously secured a license, has been required first of all to receive the permit of this Board before a license could be granted him by any Commissioner of Revenue, Clerk of Court, etc.

The plan for examination of applicants for permits as originally adopted (Nov. 15, 1884) is still in operation, and for thoroughness and fairness has recommended itself to the profession of this State, and to like organizations in other States. Applicants are examined on the eight grand divisions of scientific medicine, namely, chemistry, anatomy, hygiene and medical jurisprudence, physiology, materia medica and therapeutics, obstetrics and gynæcology, practice of medicine, and surgery. The Board is subdivided into eight committees of four members each—each committee having charge of examinations on one of the above-mentioned subjects. In addition, the five homœopathic members who were added to the Board by Act of Legislature, in 1886, were assigned one to each of the following five committees: hygiene and medical jurisprudence, materia medica and therapeutics, obstetrics, practice and surgery.

To each committee is assigned the work of conducting the examinations on a separate subject. Each committee selects and reports the questions in its Section to the Board in session before they are made known to the applicants for examination; and each question thus reported by the respective chairmen of Sections is investigated by the Board, and approved or disapproved—those questions disapproved being remanded to the proper committee for revision or substitution. The standard of requirements adopted by the Board is for the applicants to answer in writing, properly, 75 per cent. of the questions. If an applicant fails to attain of 33 $\frac{1}{3}$ per cent. on any one of the eight Sections, he is refused license, even though he aggregates 75 per cent. as the whole percentage on the eight branches. This was demonstrated to be a necessity from the fact that some applicants entirely ignored the questions in one Section, trusting to make up the deficiency on other Sections.

Two rejected applicants entered on professional work in their respective counties without the permission of the Board, and in open defiance of the law. Both were indicted and punished by the courts. One of the cases was carried to the Court of Appeals of Virginia, which sustained the Board in every point in which its constitutionality was attacked.

A so-called Resident Physician at one of the Virginia Springs, who was a non-resident of Virginia and who had never stood the examination before the Virginia Board, nor had a license to practice in this State prior to January 1, 1885, was duly notified as to the place and time of the last meeting of the Board in Roanoke, July 17, 1888, but did not put in his appearance. After

this Roanoke session, the Secretary received a letter from this *non-resident* Springs Physician, stating that neither he nor the Manager of the Springs deemed it necessary or convenient for him to go to the trouble of going over to Roanoke to undergo the *formality* of examination, and requested that some special arrangement be made for him. As further evidence seemed to indicate an intention to test the law in such cases, the Commonwealth's attorney of Shenandoah County, Va., has put this doctor under bond for appearance before the October term of his Court. There is no reason why physicians from other States should be granted exemptions from the operations of Virginia laws not accorded our own citizens. Steps are being taken to bring to justice two other doctors practicing medicine illegally in Virginia—one in Powhatan County, and one in Goochland County.

The following is a Tabular Statement of *Work done by the Medical Examining Board of Virginia, from the date (January 1, 1885,) the Law went into operation through the date of the above Report, October 9, 1888.*

INSTITUTIONS REPRESENTED BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA.	Total No. of Applicants from each.	Rejections, Total from each.	Certificates issued by Med. Ex. Board of Va.	No. Rejections making Second Applications.	Second Rejections.	Certificate Issued on Second Application.	Incomplete Examinations by withdrawals, etc.
(From Jan. 1, 1885, through October 9, 1888.)							
Medical College of Virginia	57	8	48	3	..	3	1
University of Virginia, Med. Dep't . .	33	1	32	..	..	..	..
College of Physicians and Surgeons, Baltimore, Md.	34	10	24	6	2	4	..
Univ. of Maryland, Med. Dep't, Baltimore, Md.	34	9	25	3	1	2	..
Jefferson Med. Col., Philadelphia, Pa. .	12	3	9	2	..	2	..
Univ. of Penn'a, Philadelphia, Pa. . .	..	..	2	..	..	..	..
Bellevue Hosp. Med. Col., New York .	6	1	5	1	..	1	..
Univ. of City of New York, Med. Dep. .	7	2	5	1	1	..	..
Col. of Physicians and Surgeons, N.Y. .	3	..	3	..	..	..	..
Louisville Medical College, Ky. . . .	2	1	1	..	..	..	..
Hosp. Med. College, Louisville, Ky. .	3	..	3	..	..	..	..
Kentucky School of Med., Louisville .	2	..	2	..	..	..	..
University of Louisville, Ky.	1	..	1	..	..	..	..
Med. Dep't of University of Tennessee, Nashville.	1	..	1	..	..	..	..
Vanderbilt Univ., Med. Dep't, Tenn. .	3	1	2	1	..	1	..
Detroit Med. College, Mich.	2	1	1	1	..	1	..
Univ. of Michigan, Ann Arbor, Mich. .	1	..	1	..	..	..	..
St. Louis Medical College, Mo.	1	..	1	..	..	..	..
Columbus Medical College, Ohio. . . .	3	2	1	1	..	1	..
Cincinnati Medical College, Ohio. . .	1	1	..	..	..	..	..
Med. Dep't Howard University, Washington, D. C.	7	6	1	4	4	..	..
Leonard Med. Col., Raleigh, N. C. . .	3	1	2	..	..	..	..
Med. Dep't University of Georgetown, D. C.	1	..	1	..	..	..	..
Hahnemann Homoeopathic Medical College, Philadelphia.	2	..	2	..	..	..	..
Medico-Chir. Col., Philadelphia, Pa. .	3	3	..	2	2	..	..
Geneva Medical College, New York . .	1	..	1	..	..	..	..
Heidelberg, Germany	1	..	1	..	..	..	..
Baltimore Medical College, Md. . . .	1	..	..	..	..	..	1
Colleges Unknown.	4	3	..	..	..	..	1
Non-Graduates.	11	4	5	..	..	..	2
Cleveland Homoeopathic Hosp. College, Ohio.	1	..	1	..	..	..	..
Total number of Examinations . . .	240	54	181	25	10	15	5

Number of Applicants examined by Individual Examiners out of Session. 117
 Number of Applicants examined by Board in Session. 123
 N.B.—The first and second columns add up 243 and 184 respectively; but three of the applicants each gave two Colleges of graduation.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President.—Dr. E. W. Row, of Orange, Va.

Vice-Presidents.—Drs. Wm. S. Christian, of Urbanna, George S. Luck, of Roanoke, and L. Ashton, of Falmouth.

Recording Secretary.—Dr. Landon B. Edwards, of Richmond, Va.

Corresponding Secretary.—Dr. J. F. Winn, of Richmond, Va.

Treasurer.—Dr. Richard T. Styll, of Hollins, Roanoke Co., Va.

Committee on Applications for Fellowship at Annual Session, 1889.—Drs. Wm. D. Turner, of Fergusson's Wharf, R. M. Slaughter, of Theological Seminary, I. S. Stone, of Lincoln, Alfred S. Rixey, of Culpepper, and John Clopton, of Williamsburg.

Executive Committee.—Drs. Wm. W. Parker, of Richmond, Hon. Fellow J. Herbert Claiborne, of Petersburg, Jacob Michaux, of Richmond, L. Lankford, of Norfolk, and Hon. Fellow Hunter McGuire, of Richmond. The Recording Secretary and the Treasurer are *ex officio* members.

Committee on Publications.—Drs. C. W. P. Brock, George Ross, and Hugh M. Taylor, each of Richmond, Va. The Recording Secretary and Treasurer are *ex officio* members.

Necrological Committee.—Hon. Fellow Dr. J. Edgar Chancellor, of University of Virginia, Chairman.

To Deliver Annual Address to the Public and Profession, Session 1889.—Dr. Thomas J. Moore, of Richmond, Va.

Subject for General Discussion, Annual Session 1889.—Croupous Pneumonia.

Leader in this Discussion.—Dr. B. L. Winston, of Hanover C. H., Va.

Place of Annual Session 1889.—Roanoke, Va.

Time of Annual Session 1889.—About September 3—the exact day to be definitely fixed and announced by the Executive Committee some months hence.

The next order of business being the nomination to the Governor of

MEMBERS OF THE MEDICAL EXAMINING BOARD OF VIRGINIA

to serve for the regular term of four years, beginning January 1, 1889, Honorary Fellow DR. J. EDGAR CHANCELLOR, of University of Virginia, introduced the following resolution:

Resolved, That the Medical Society of Virginia, desirous of showing their appreciation of the work performed by the Medical Examining Board of Virginia for the term of four years to terminate December 31, 1888, nominate each of the thirty-two regular physicians now representing this Society on that Board, and recommend to the Governor of Virginia to issue commissions in due form to each of those so nominated to serve for the reg-

ular term of four years, beginning January 1, 1889, as members of that Board.

This resolution was unanimously adopted.

The following are the thirty-two members of the regular profession, who are to compose the

BOARD OF MEDICAL EXAMINERS OF VIRGINIA

for the term of four years, beginning January 1, 1889, with their post-office addresses.

State at large.—Drs. T. J. Moore, Richmond, Va.; I. S. Stone, Lincoln, Va.

1st Cong. District.—Drs. S. W. Carmichael, Fredericksburg, Va.; O. B. Finney, Onancock, Va.; W. W. Douglas, Warsaw, Va.

2nd Cong. District.—Drs. Jesse H. Peek, Hampton, Va.; Herbert M. Nash, Norfolk, Va.; James Parrish, Portsmouth, Va.

3rd Cong. District.—Drs. R. A. Lewis, Richmond, Va.; C. R. Cullen, Richmond, Va.; Hugh M. Taylor, Richmond, Va.

4th Cong. District.—Drs. J. Herbert Claiborne, Petersburg, Va.; W. J. Harris, Blackstone, Va.; Hugh Stockdell, Petersburg, Va.

5th Cong. District.—Drs. Rawley W. Martin, Chatham, Va.; W. L. Robinson, Danville, Va.; T. B. Greer, Rocky Mount, Va.

6th Cong. District.—Drs. H. Grey Latham, Lynchburg, Va.; A. Trent Clark, South Boston, Va.; Oscar Wiley, Salem, Va.

7th Cong. District.—Drs. Wm. P. McGuire, Winchester, Va.; J. H. Neff, Harrisonburg, Va.; Hugh T. Nelson, Charlottesville, Va.

8th Cong. District.—Drs. C. C. Conway, Rapidan, Va.; Alexander Harris, Jeffersonton, Va.; Bedford Brown, Alexandria, Va.

9th Cong. District.—Drs. Robert J. Preston, Marion, Va.; R. W. Huffard, Chatham Hill, Va.; S. W. Dickinson, Marion, Va.

10th Cong. District.—Drs. Z. J. Walker, Brownsburg, Va.; H. M. Patterson, Staunton, Va.; G. D. Meriwether, Green Forest, Va.

OCTOBER 25—THIRD DAY.

The Corresponding Secretary, DR. J. F. WINN, of Richmond, presented a circular letter from the Publication Committee having charge of the

REVISION OF THE UNITED STATES PHARMACOPEIA,

requesting this Society, in common with every other regular State Medical Organization, to appoint a Committee of three to act with the Publication Committee of the American Pharmaceutical Association, in perfecting the revision of the volume to be issued in 1890.

DR. R. M. SLAUGHTER, of Theological Seminary, moved that the Committee of three be appointed as requested—carried: The President appointed Drs. R. M. Slaughter, Wm. B. Towles,

of the University of Virginia, and John N. Upshur, of Richmond.

The Treasurer, DR. RICHARD T. STYLL, of Hollins, Va., presented his report for the year just ended, showing a balance on hand of \$229.18.

Instead of a formal "Report on Advances in Surgery," to which task he had been assigned, DR. WM. EDWARD MCGUIRE, of Richmond, read a paper on

PATHOGENIC GERMS OR MICROBES, AND SOME CONDITIONS RELATING TO INFECTION.

He said that the "pathogenic micrococci" of chief interest to the surgeon are those of open wounds, such, for instance, as the micrococcus of syphilis, gonorrhœa, acute infectious osteomyelitis, progressive necrosis, etc. The "pathogenic bacilli" are those of syphilis, tubercle, tetanus, anthrax, ulcerative stomatitis, etc. The baneful influences exerted by these organisms on living bodies have been explained in four ways: Acting as an invading army, they destroy the raw food of the weaker inhabitants (the tissue-cells), which require more complex bodies for their assimilation; or (2) they interfere with the due performance of the depurating organ, and produce disease by preventing the elimination of urea and other final products of repressive metamorphosis; or (3) as microbes, along with all living beings, produce excretion, and this excretion is discharged into the body of the animal in which the microbes live, it would produce deleterious effects as certainly as if the animal's excretions had been retained; or (4), as is most generally accepted, the injurious effects produced by microbes is not due to what they take or excrete, but to what they leave; and this is associated with the demand they make for the oxygen of the tissues. Living and multiplying without direct exposure to air, they obtain their required oxygen from the tissues by which they are surrounded; and when oxygen is withdrawn from such complex chemical compounds as our tissues are composed of, the elements enter into new and abnormal combinations (ptomaines) which are believed to be the really poisonous agents. Depression of vitality of the part attacked is an important factor in the process of infection. An essential condition in the production of local depression is inflammation. Practically, the microorganisms enter the body in the first stage of inflammation. Much depends on the part of the body exposed to infection—some microorganisms infecting only one part of the body, and others another part. Pettenkoffer believes that everything that increases the amount of water in the blood predisposes the individual to infectious diseases.

Under call for "Reports in Chemistry, Pharmacy, Materia Medica and Therapeutics," the Chairman, DR. R. A. LEWIS, of Richmond,

presented the report, prepared by Dr. Joseph M. Whitfield, lately of Richmond, but now resigned and removed to New York, on

ADVANCES IN CHEMISTRY.

Organic chemistry is the branch attracting special study at present.

Incompatibilities should be better known by physicians. Thus, iodol is incompatible with yellow oxide of mercury, and yet with those unfamiliar with chemistry, such a prescription is often written for an ointment. But in a week's time the neat-looking yellow homogenous ointment changes to a dirty grayish mixture. The trouble is the excess of iodide in the iodol is given off and decomposes the yellow mercuric oxide.

Saccharin, or saccharinic acid, the sweetest of all known substances, belongs to the group of coal-tar products, and is antiseptic. It is claimed also that it acts directly on the fourth ventricle, and thereby diminishes the amount of sugar produced in the system. It is a boon to diabetics having the proverbial "sweet tooth." It is dispensed in half to one grain tablets. One grain will make a cup of coffee too sweet for most persons. It combines readily with most alkaloids, such as quinia, morphia, cocaine, etc. As it prevents fermentation, it is used in gastric and intestinal disorders.

Cocaine saccharinate is about four-fifths the strength of cocaine muriate, but has no bitter taste.

Antipyrin and antifebrin are noted as derived from amilide. Antipyrin is a proprietary drug, and cases of poisoning by it have been reported; but no case of poisoning by *antifebrin* has yet come to light, nor does it interfere with the digestive tract as does antipyrin. Besides, its effects in smaller doses lasts longer; it stimulates rather than depresses the vaso-motor and muscular systems; it has no after effects, and it is very much cheaper than antipyrin. Antipyrin is strongly recommended as a prompt hæmostatic, leaving the wound clean.

Pltates are salts formed by the action of the organic acid—pltalic acid—on vegetable alkaloids. The special advantages claimed for these salts is their great solubility and stability.

Sulfonal, an oxidation product of ethyl-mercaptan with acetone, is tasteless and colorless and crystallizes in large tablets, easily soluble in alcohol and in two parts of water. It is hypnotic in doses of from gr. xx-xxx.

Amylene hydrate, or di methyl-ethyl carbynol, is a tertiary amyl alcohol—a clear liquid having an ethereal odor and a camphor-like taste. It ranks between chloral and paraldehyde as a hypnotic. It is safer than chloral, as it does not depress the heart or respiratory centres, and has not the nauseous taste nor cause the disagreeable eructations of paraldehyde.

Urethran, or ethyl-urethran, produces sleep like normal sleep, leaves no headache nor gastric disturbances, and only slightly slows the pulse. It is soluble in water and its taste is not unpleasant. Dose for infants from 12 to 18 months old, about 4 grains.

Menthol, or peppermint camphor, is a soluble crystalline salt, looking like Epsom salts, deposited when Chinese oil of peppermint is exposed to cold, forming stearoptine of peppermint oil. It equals thymol as an antiseptic, and hence its use in diphtheria, typhoid and scarlet fevers, etc.

After some notes about cocaine, jambul seed is mentioned as a new treatment for diabetes mellitus. Dose of the fluid extract of the seed, from 5 to 10 minims.

Succinimide of mercury for hypodermic purposes seems to be a valuable preparation. It is a white, silky powder, prepared by heating together ammonia and succinic anhydride, and then adding mercuric oxide. It is very soluble in water and the solution is a permanent one. It is cheap.

DR. H. ROLFE DUPUY, of Norfolk, Va., read the report on

ADVANCES IN MATERIA MEDICA AND THERAPEUTICS.

In reviewing the literature on this subject during the past year, he called special attention to the two great antipyretics, antipyrin and antifebrin, showing their uses and abuses, and the particular indications for each, claiming for the latter the greatest and most varied use. Strophanthus was urged as the great heart tonic, particularly when used in connection with ether, and also with nuxvomica. Attention was called to the great value of ichthyol in skin diseases and rheumatic pains. The literature about salicylate of ammonia was reviewed *in extenso* in connection with the treatment of typhoid and remittent fevers. Salol, sulfonal, sparteine, pichi, jambul and other new remedies or preparations came in for their appropriate share of attention. In conclusion, he condemned the use by physicians of proprietary preparations which did not have attached to the description a working formula for the guidance of the pharmacist.

Dr R. C. POWELL, of Alexandria, read a paper on the

ETIOLOGY OF PYREXIA FROM THE STAND-POINT OF MODERN PHYSICS.

He remarked that no theory based wholly on demonstrated science has yet been offered to explain the high temperature in pyrexial diseases, any attempt to explain the phenomenon by a theory not in harmony with the laws of conservation of energy or correlation of forces is not worth consideration. After a full discussion of numerous theories, he presents the following as his conclusion:

1. The matter of the human body is identical with that of the world around us; and the forces of the human body are the same as those of inorganic nature. This body as a piece of mechanism are more perfect than any other apparatus for the transformation and distribution of energy, with which it is supplied, but possesses no creative power.

2. The relation between combustion and heat is coincidental, and not causal. If heat is the result of collision between carbon atoms and oxygen atoms, this collision must precede that intimate union of such atoms which is termed combustion; and as the effect can never precede the cause, heat cannot possibly be the effect of combustion.

3. The oxidation of tissues *cannot* be exaggerated by the presence of micro-organisms whose very existence is maintained by the *absorption* of oxygen from these tissues.

4. In all *essential fevers*, the pyrexia is probably due to increased molecular motion.

5. The rapid waste of fatty tissue in fever is not so intimately connected with the production of heat as with the production of energy—some of which is manifested in the accelerated action of respiration and circulation.

6. In sympathetic pyrexia, heat is a form of energy which, by reason of traumatic lesions of the nervous system, is prohibited from expending itself in functional activity or motion, and is therefore transmuted into heat, which is the form most frequently assumed by transmutable energy.

7. The only rational way to treat essential fever is to destroy the cause of it; but for agents to cause this destruction, no enthusiastic search will be made until we repudiate the idea that the great object in the treatment of fever is to place the system in the most favorable condition for recuperation after the disease shall have run its course.

Dr. LEWIS G. PEDIGO, of Roanoke City, read a paper entitled

ANTAGONISM BETWEEN AMYL NITRITE AND PRUSSIC ACID.

After certain preliminaries, he gave an account of three representative experiments out of a series that he had performed on lower animals, illustrating the use of amyl nitrite by inhalation as a treatment for prussic acid poisoning. The experiments consisted in administering the poison in large doses—hypodermatically—and beginning the use of the antidote at once by inhalation. Collateral experiments were reviewed in which the poison was given in equal or smaller doses and the antidote withheld. The effects were observed and compared, always showing a remarkably heavy balance in favor of the remedy. In one of these experiments a dog's life was saved by the use of the nitrite of amyl from the action of the same dose which had just killed a similar dog in five minutes and fifteen seconds, without treat-

ment. In commenting on the experiments, a theory was evolved to explain the action and antagonism of the two drugs. The convulsion and arterial spasm of prussic acid poisoning were attributed to paralysis of the inhibitory nerve centers. The relief of these symptoms by nitrite of amyl was accounted for on the supposition that this drug stimulates those centers. The two drugs were shown to antagonize each other in six distinct physiological items, thus proving the amyl to be a more nearly perfect physiological antidote to prussic acid, than is known for any other poison. He suggests the use of the same remedy in cases of poisoning by other cardiac depressants, and enumerated aconite, veratrum viride and gelseminum.

(To be concluded.)

Obstetrical Society of Philadelphia.

Stated Meeting, October 4, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D.,
IN THE CHAIR.

(Continued from page 679.)

DR. B. F. BAER read the following report of

TWO CASES OF MULTILOCLAR OVARIAN CYSTOMA of unusual size and very rapid growth. Mrs. T. was sent me by Dr. J. A. Clark, of Bedford, Pa., and on July 31st entered my private hospital. She is æt. 28 years; married; has had two children after normal labors, the youngest being six years of age. About nine month previous to this date, she was attacked with severe pain in the right ovarian region and was confined to bed for several weeks. Her menses had always been regular, but at this time the flow was profuse and continued two weeks. Soon after this attack of pain and metrorrhagia she noticed a swelling in the painful region, on the right side. She rapidly increased in size and began to lose flesh, and occasionally to have attacks of pain and metrorrhagia similar to the one noted above, the flow for several occasions lasting for a month. Her abdomen was enormously distended, especially in the upper portion. It was rather symmetrical, dull on percussion all over the anterior and lateral portion except in the lumbar regions, where slight resonance was observed. There was fluctuation in the lower part, but in the upper portion it was very obscure. The skin on the lower surface of the abdomen was in a condition of elephantiasis.

Vaginal examination revealed the uterus slightly retroverted, rather mobile, and gave a sound measurement of three inches. The lower surface of the tumor could just be felt by the vaginal examination. The patient had a very weak pulse, indeed it could not be felt at all at

the left wrist and she had great dyspnoea on the slightest exertion.

Operation was performed on August 2nd. I was assisted by Drs. J. C. Bowen, G. H. Franklin, J. A. Clark and H. C. Bloom. An incision three inches in length was made in the usual position. The skin at the point of the incision was fully half an inch thick and very vascular and considerable subcutaneous adipose tissue was present. As soon as the tumor was reached it presented the appearance common to ovarian growths, but it was found to be closely adherent to the abdominal wall. After separating as far as the finger would reach, the tumor was punctured with Tait's large trocar, and about four gallons of greenish fluid drained away; but only the lower portion of the tumor collapsed, the greater and upper portion remained as before. This was punctured in a number of places without removing the instrument from the cavity which had been drained, but nothing followed. The opening in the tumor was now enlarged and the hand introduced and the multilocular condition broken down, large pieces of semi-solid substance being torn loose from the cavity of the tumor and brought away, together with a great deal of semi-fluid debris. As soon as room was gained the hand was carried outside the tumor, when it was found to be adherent to the liver, stomach, and everything with which it came in contact. These adhesions were carefully separated and after considerable effort the remainder of the tumor was finally brought out through the incision, which had been previously increased to three and a half inches. The pedicle, which was found to be thick and quite vascular, was transfixed and ligated and the tumor cut away. The cavity was irrigated with filtered boiled water, as much as two gallons being used. The irrigating tube was carried in every direction until the water returned clear. The right ovary was not removed, it being in apparent health. The wound was closed around a drainage tube. There was considerable shock. The pulse could not be felt at either wrist and it was two days before it returned, although the patient seemed to be doing well. The usual after treatment was carried out and the patient has made an excellent recovery. She went home (250 miles) on the twenty-seventh day and still remains in good health. The temperature never rose above 100° and the drainage tube was removed on the second day. The tumor was a multilocular cyst and weighed about ninety pounds.

On September 5th I was asked by my friend Dr. R. Armstrong, of Lock Haven, to meet him in consultation in a case of abdominal tumor, which he stated was in such extreme condition that he feared she might not live until my arrival.

I saw the patient on September 6th. She is 21

years old and single; puberty had occurred at twelve and menstruation had always been profuse, coming on every three weeks and always attended with some pain; she did not consider this abnormal, and so far as she knew was perfectly well up to four months previous to the above date. In the latter part of April of this year after unusual exertion about the house, she was suddenly attacked with severe cramp-like pain in the right iliac region, so severe indeed as to alarm the neighbors by her outcries. This attack occurred about the time of her expected menstruation and continued until the flow followed, when she gained considerable relief. But she remained ill from that time, being able to go about, however, in the intervals between the series of attacks of pain of similar character which now followed. Within two weeks after the first attack she noticed that her abdomen was increasing in size in the painful region and from that time to the present, just four months, her abdomen has grown to an enormous size. I found her occupying a semi-recumbent posture and breathing with difficulty. She was emaciated to such a degree, and the tumor was of such size, that she was almost hidden from view beneath it. The surface of the abdomen was purple from interference with the capillary circulation and the veins were greatly distended. The abdomen was symmetrical and smooth. Fluctuation was rather obscure. There was dulness on percussion all over the anterior and lateral surfaces of the tumor, except at a point far back in the left lumbar region, where slight resonance was found. On the upper right border of the tumor, in the region of the liver, there was an apparently solid mass, shaped somewhat like the liver, suggesting the possibility that the cyst had grown from that organ. This was given more prominence on account of the rapidity of the growth. The patient was unable to retain anything on her stomach; she had not slept except at short intervals, for weeks. Her bowels were constipated and the urine was passed frequently and in small quantities. Her pulse was 140 and very feeble. Her expression was an appealing one and she begged to be relieved.

A tablespoonful of whisky was given and repeated in two hours, just before the administration of the anæsthetic. I was ably assisted in the operation by Drs. Armstrong, Ball, and Watson, of Lock Haven. An incision two inches in length was made. The surface of the cyst was adherent to the peritoneum. After separating the adhesions as far as I could I plunged a large trocar into the tumor. But the contents were semi-solid. I therefore cut through the cyst-wall and proceeded to break up and remove the contents. The cyst was adherent to everything it touched, liver, stomach and other viscera, but the adhesions were weak, and in ten minutes' time the tumor was removed and the pedicle, which was thick and vas-

cular, was ligated. The omentum was so firmly adherent to the cyst that it was ligated and amputated. The friable cyst-wall was ruptured in many places and a great deal of the viscid semi-fluid material escaped into the abdominal cavity, but I did not lose time in trying to prevent this. When the tumor was removed what was left of the patient was an exceedingly small portion. The emaciated abdominal walls lay close to the spinal column and sunk into the pelvis. She looked more literally "nothing but skin and bones," than anything I had ever seen before. The abdominal cavity was thoroughly washed out by irrigation through a fountain syringe, and I was careful to pass the nozzle high up among the intestines and under the surface of the liver and diaphragm. The water returned clear and the incision was closed around a drainage tube and the patient returned to the bed with a better condition of pulse and appearance than she had before the operation. She did not show any evidence of shock and was conscious almost as soon as she was placed in bed. Her body was so emaciated that it was necessary to pack with cotton about the pelvis and along the spinal column, as the bones almost projected through the skin, and at several places bed-sores were apparent. The R. ovary seemed smaller even than its natural size and appeared thinner; it was therefore not removed. The after history of the case has been without event. Her temperature never rose above 100° and was normal on the third day after the operation. The pulse gradually diminished from 140 and was normal on the fifth day. The drainage tube was removed within thirty-six hours after operation. The sutures were removed on the eighth day, when union was found complete, except at the lower portion where the drainage tube had been, and this has since healed. She began taking solid food on the third day and on the fourth day her bowels were moved. The tumor weighed about 75 lbs.

The points of considerable interest in these cases are the location, character, and severity of the early symptoms, as well as the location of the tumor when first noticed (in the right side), while the tumors were of the left ovary, the right being perfectly healthy; the large size and very rapid growth of the tumor; the rapid recovery of the patients although in extreme condition, especially of the case last mentioned; the fact that the two cases are alike in nearly all particulars, the only difference being that in the second case the rapidity of the development was much greater, and the severity of the symptoms likewise greater; and lastly, the method of removal of the tumor, that is, the breaking up of the semi-solid contents with the hand, thereby permitting their removal through a very short incision. I wish here to call attention to a fatal case which occurred in my practice several months ago and which forcibly

illustrates that there may be danger in introducing the hand for the purpose of breaking down contents of the tumor, not knowing exactly the location of the intestines. In the case referred to the friable wall of the main cyst had ruptured and some coils of intestines were found to be in the cavity and closely adherent to the more solid portion of the contents. Very careful manipulation was necessary to separate the bowel, which was finally done after considerable time had been spent in the effort. Ordinarily, however, where the cyst has not previously ruptured the procedure is a safe one when due care is observed.

DR. M. PRICE reported a case of

PYOSALYNX WITH RUPTURE.

On the 6th of September I was called to Mrs. —, with symptoms of miscarriage, with pains, hæmorrhage and slight odor to the discharge. She refused to have an examination, saying she knew she was not pregnant. I left her with the understanding that when she was ready for me to examine her to send for me. On September 10, I was again called, and found her in great pain; the discharge of blood and broken down placenta were of the most offensive character. She stated that she had been perfectly regular up to her last period, which was delayed about one week. She had considerable fever, a temperature of 102° , and had had that morning a severe chill. On examination the uterus was found about four inches in depth, with part of a rotten placenta adherent to its right posterior wall. The uterus was in good position and perfectly movable, with both tubes enlarged and thickened, and at this time could not have been adherent to any surrounding structure. I removed the placenta with considerable difficulty, used hot water irrigation with boric acid in the uterine cavity, which, for a time, gave her great relief. These irrigations were continued, and the uterus washed out twice a day for three days, all this time the tubes continuing to enlarge, until they must have contained several ounces of matter, and could have, at this time, been easily removed. The irrigation into the uterus were discontinued, and those of the vagina were kept up. I became very much alarmed at her condition, and stated to the husband that an operation was needed to save his wife's life. This he refused, and begged that I should do all I could without the operation. I yielded to his request much to my regret, for I felt that nothing but an immediate operation and removal of the tubes, which then would have been possible, as there had been little if any leakage up to that time into the peritoneal cavity, would save her life. I believe that any man treating a case of this kind with the symptoms as positive and the indications as plain as they were in this case for operation, should have retired from the case, for by so doing, he clearly indicates that his mind is

made up as to the treatment and the only chance to save, and by so doing, shows to the medical attendant who may be called to the case, the proper line of treatment, and if he does not take the warning, the post-mortem will follow and show who was right. There were several well-marked changes in her condition, indicating rupture or leakage from the tubal abscess, and her condition steadily grew worse until the 20th, when in consultation with my brother, we persuaded the family and the patient to let me operate and give her that chance for life, as she was in a very bad septic condition. As the consultation was at a very late hour at night, she was opened early the next morning (21st). I found the internal organs matted together, uterus much enlarged, both tubes enlarged and ruptured, adherent to everything they touched, pelvis full of pus cavities, pus cavities almost up to the kidneys on both sides; everything in a semi-gangrenous condition; but little bleeding from ruptured adhesions or from wound in opening abdomen, which is never a good indication. A great quantity of pus was evacuated, at least two pints, of the most offensive character. Irrigation and drainage were used. The patient was a very large woman, consequently the longest drainage tube we could find was used. She rallied from the ether, and for the first six hours there was discharge from the drainage tube, two pints of very offensive serum. It gradually lessened in quantity, but increased in offensive character. A cleaning of the tube was made every half hour; before cleaning warm boracic water was injected through the tube. It improved matters only for the moment. Patient died twelve hours after the operation. Present at the operation: Drs. Joseph Price, E. W. Cushing, of Boston, Atherton, Toronto, Roseburg, Hamilton, Ontario.

DR. W. H. PARISH said that his remarks on this subject of pelvic abscess read at the recent meeting of the American Gynecological Society had been misquoted. He had stated there, and wished to repeat here, that these abscesses should be opened very early. If operation was not resorted to the patient would most probably either die or become a confirmed invalid. He was not one of those who believe that pus always originates in one particular point in the pelvis. He did, however, believe that the large majority of cases occur because of pus primarily in the tube. He believed, also, that an uncertain number of cases occur from pus originally formed in the areolar tissue, beginning probably because of lymphangitis of that particular locality. The question arises as to how best to operate in these cases. He said that there could be no absolute rule of procedure. He believed that, in the majority of cases, it was wiser to make an opening in the median line and explore the peritoneal cavity, unless we are very certain that the abscess is not

in the tube or ovary. If we are sure that there is no involvement of the appendages and that the pus is not intraperitoneal, the abscess may be opened without going into the cavity. He called attention to a procedure which he had adopted in a few instances, where small abscesses were located in pelvic areolar tissue. In one instance Dr. Longaker made an incision in the median line. The tubes and ovaries were found free from pus, but of course congested. With the fingers within the abdomen he felt in the anterior pelvic wall an abscess. An incision was made over Poupart's ligament as for ligature of the external iliac. Then passing deep into the pelvis, pus was reached some distance below the brim of the pelvis. In another case there was an indurated mass apparent above the left half of the pelvis, not very recognizable through the vagina, except on very deep pressure. An incision was made above Poupart's ligament. After cutting through very dense tissue, he came to a minute cavity which contained no pus, but a somewhat serous fluid containing flakes of lymph. These are only two of a considerable number of pelvic abscesses in which he had operated, and he had never regretted operating early.

DR. J. M. BALDY wished to take this opportunity of emphasizing views which he had expressed before the recent meeting of the American Gynecological Society. He did not agree with Dr. Parish as to the pathology of this affection. He granted that there was the possibility of an abscess occurring in the pelvis, such as occur in other parts of the body from the scalp to the foot, but that these must be most rare. The gentlemen connected with what Dr. Parvin had been pleased to call "the Philadelphia Dispensary School of Surgery" had now done over one hundred of these operations, and had not yet in a single case come across one which had not begun primarily in the tubes or ovaries. In every case the diseased mass removed has been tube, ovary and other tissues involved. (Dr. Parish, at this point, asked wherein his views differed from those of Dr. Baldy?) He had to leave that to be inferred from what Dr. Parish had said. In regard to treatment he must again dissent from the views expressed. He thought that an absolute rule *could* be laid down. Where pus was found in the pelvis, early or late, the proper procedure was to open the abdominal cavity, and where it was not possible to remove the seat of the disease, proper drainage should be established. However, it would be found comparatively seldom that the abscess could not be taken out by a bold operator.

DR. JOSEPH PRICE thought that he understood Dr. Parish. He himself had said repeatedly that we might have an abscess in any part of the body from the scalp to the matrix of the nails, we may have it in the cellular tissue of the pelvis as well as in the axilla or neck, but he must hold to

what he had said, that in all the pelvic abscesses that he had seen he had not found one not due primarily to tubal disease. Among the recent papers on the subject, one calls attention to the treatment by drainage through the vagina. He did not see how this will avail much in bilateral accumulations. You may evacuate half of the tube, but you have left a condition of affairs such as is found in an old bubo. In pelvic abscess we have just the condition of affairs which the surgeon is asked to treat in the groin, axilla or popliteal space. In such a case he would remove the disease by a clean enucleation and perfect a cure. He had not seen a case of pelvic abscess which could not be removed in this way and he should say that such cases did not exist. One gentleman at Washington went so far as to say, that after drainage by vagina in a case of double pyosalpinx, recovery had followed—the woman had borne children. He might as well have said she had conceived, notwithstanding her husband had previously been castrated.

DR. M. PRICE remarked that it was a question whether you could say that the tube was diseased or not, by simply looking at it. He remembered a case a few weeks ago, where the tube was congested and inflamed. It seemed to be simply swollen, but on pressure there was forced from the fimbriated end a drop or two of as perfect gonorrhœal pus as could be found anywhere. If he had not seen the discharge, he should have thought that there was no disease save congestion.

(*To be concluded.*)

FOREIGN CORRESPONDENCE.

Pettenkofer's Views on Zymotic Diseases and Quarantine.

[The following is translated from manuscript given by Professor von Pettenkofer to Dr. Horatio R. Bigelow, for THE JOURNAL.]

For thirty years I have held the opinion that all the so-called zymotic infectious diseases (typhoid fever, cholera, yellow fever, etc.) are caused by lower organisms, and that the specific germs are spread by human intercourse. I differ from the contagionists, however, in the important particular that I place the causes of the epidemic diseases, so far as they show a striking dependence upon locality and season, not in people, but in their surroundings.

I classify infectious diseases as entogenous and ectogenous: entogenous when the virulent infectious material is simply transferred from the infected to the healthy person, and infects him (such as small-pox, syphilis, etc.); ectogenous when the germ spread by human intercourse must first go through a certain stage outside the human organism in order to increase and become virulent,

and become capable of infecting, as for example malaria.

It is not the cholera patient nor the yellow fever patient that infects, but the cholera locality and the yellow fever locality. Physicians and nurses, therefore, are no more affected than persons who do not come at all in contact with the patients. In a hospital containing cholera or yellow fever patients, but which is not a cholera or yellow fever locality, the nurses and attendants remain healthy, and other patients are not infected. Of course a hospital, just as well as other houses, may become an infected locality, and in that case attendants and other patients may become infected; a so-called house epidemic breaks out, but in this case the infection is due to the locality, not to the patients. So it is in barracks in which epidemics break out without a sick person having been previously brought there.

House epidemics in hospitals in which cholera patients are assembled are not more frequent nor more severe than house epidemics in barracks in which every suspicious case of diarrhœa among the soldiers is immediately removed—isolated.

For infection there must be not merely the presence of infectious material, but there must be also a certain quantity of it. It is true, so much locally produced infectious material may be carried from cholera and yellow fever localities, in individual cases, by human and other means, into other places, that infection is produced; but this seldom occurs, and does not cause epidemics, but sporadic cases only, when the germs do not fall on fruitful soil, and the place is not disposed to the ectogenous spread of infecting material.

There are places that always have immunity from imported infectious material (such as Versailles, Lyons, etc.), but the affected places have immunity from ectogenous development of the imported germ, which alone is capable of causing infection, only temporarily and now and then.

As in places in which cholera or yellow fever is endemic there is often a considerable length of time in which there are no patients, or they are very few, without the specific poison having disappeared from the place, and then again there are numerous cases after a little time, without the infectious material causing them having been newly imported, so may the specific material from cholera or yellow fever localities, carried to other places by human intercourse, cause an epidemic after it has had time for development (which time, according to Pettenkofer's observations, may be many months).

For this reason we seldom find the trace of personal or local connection between the first cases in a country or in an active commercial city, as well between one another as with immediately preceding foreign cases, or cases brought from without.

For this reason also all quarantine regulations of land and water, all disinfection and isolation,

which are limited to the known cholera or yellow fever patients, are always ineffective.

Pettenkofer cites many facts going to show that cholera epidemics do not become more violent and do not last longer when intercourse with cholera patients is not limited to the least extent, and when neither isolation nor disinfection are practiced. Where these measures seem to have been used, the local and temporary disposition of the locality was wanting. So soon as there is this disposition in a place, and the specific material is present, the disease breaks out, and all measures based on the grounds of the contagionists are futile.

In order for the disease to occur there is necessary not only a sufficient quantity of the specific infectious material, but also an individual disposition. When a number of people are exposed to the same influences of intercourse and infected locality, all of them are never attacked, but only a small number, corresponding to the more or less developed individual disposition. The duration (?) of the disease—even in a slight degree—protects for a considerable time against repeated infection.

Some are inclined to explain the temporary outbreak and the gradual subsidence of a cholera epidemic in a place by the existence of individual disposition and its subsequent exhaustion. This is a mistake, however, for were it true there would be no places having immunity, whose inhabitants could pass through the disease, and after the introduction of the poison severe epidemics would certainly break out. Nor can the extinction of the local epidemics be explained on the theory that that there are no more disposed persons in the place. The explanation must be that the place ceases to produce virulent infectious material. When this happens disposed persons come in greater number from without, and the epidemic is extinct (Leipzig, 1866, and Messina, 1887).

The occurrence and conduct of cholera on board ships, in the light of later examination, are very much against the contagionist and more in favor of the locality views.

The drinking-water theory is applicable neither to cholera, nor to yellow fever, nor to typhoid. In non-sterilized water cholera bacilli and typhoid bacteria perish quickly, partly for want of suitable nutritive material, and partly also from coming in contact with the non-pathogenic water bacteria; and even when they are viable in a cholera or typhoid stool in wells or water-pipes, the infectious material is so extraordinarily diluted, that infection from the use of such water cannot occur. Hitherto there has been no experiment on animals that has succeeded in infecting one of them with pathogenic micro-organisms (of anthrax, chicken cholera, etc.) through drinking-water; and this is in complete accord with epidemiological facts. Nevertheless, Pettenkofer is enthusiastic on the subject of good drinking-water,

because clean and pure water is generally a deeply felt want, and is a necessity not merely in typhoid and cholera places, but in all other places.

As regards the prophylactic measures, these should be directed: 1. Against the spread of the germs of specific disease by human and commercial intercourse. 2. Against the individual disposition. 3. Against local disposition.

The spread of the specific germ can be hindered only by the discontinuance of all personal and commercial intercourse with infected places, but never by a mere watching and regulation of such intercourse, since this is never, in the bacteriological sense, fungus-proof. As a rule the germs are already spread before a patient is discovered in a place. All the rules in this direction have, therefore, been without good result, whether applied to land or water. The cessation of all intercourse for a long time, for a series of years, even were such a thing possible, would be a greater misfortune than cholera and yellow fever.

It would certainly be better if people could be freed from the individual disposition, or even if this could be lessened, as in the case of small-pox by vaccination. It is possible that an inoculation material may be found for cholera, but thus far none has been found to serve the purpose.

We have well-tried measures against local disposition. The most important part of the local disposition is uncleanness of the soil due to human excreta. Cleansing and keeping clean the soil upon which our dwellings stand is the best prophylactic measure against cholera and typhoid epidemics, and probably also against yellow fever. Wherever there is proper house-drainage and removal of every kind of excrement and garbage by canalization, removal of all privy vaults, and of all material that will not float, the disposition to these diseases is either entirely destroyed or very much diminished. England, for example, in spite of its unbroken and very free communication with cholera-infected places, and in spite of several important cases of cholera, since 1866, in consequence of its sanitary improvements, it has had no epidemic of cholera. The City of Munich, formerly known to the whole world by reason of its numerous cases of typhoid fever, has now only 14 cases per 100,000 yearly, instead of 300 per 100,000 as in former years. There are places so fortunate as to have a natural immunity against cholera. But even those places that have not natural immunity, can be rendered free of disposition by hygienic art (such as Fort William at Calcutta).

But the measures for giving immunity to a place should not be delayed until an epidemic breaks out, but should be carried out beforehand, so as to be truly prophylactic. An unclean soil cannot be made clean suddenly, even when man ceases to pollute it further, but it requires time for self-cleansing; just as a field does not become

suddenly unfruitful when we cease to fertilize it. It requires time, and more or less according to the quality of the soil.

These and many other important epidemiological facts are laid down in Pettenkofer's writings. The most important are to be found in his two recent works: "Zum gegenwertigen Stand der Cholerafrage," Munich, 1887, and "Der epidemiologisches Theil der Berichtes über die Thätigkeit der zur Erforschung der Cholera im Jahre 1883 nach Aegypten und Indian entstanden deutschen Commission," Munich, 1888.

Local factors are more prominent in yellow fever than in other infectious diseases. In yellow fever the local limitation is much narrower. The epidemics usually occur on the seashore and on the banks of large rivers, and do not extend far inland. Temperature, brakish water, or soil water containing a good deal of salt, in the soil has a local influence.

The researches of Professor Billings, of the University of Nebraska, in regard to cattle plague or Texas fever and yellow fever show many analogies to the views of Pettenkofer.

NECROLOGY.

Henry B. Sands, M.D.

HENRY BERTON SANDS, probably the best known of the surgeons on the Atlantic seaboard, died of apoplexy, in his carriage, November 18, with an appalling suddenness. He was born Sept. 27, 1830, in New York City, and was throughout life identified with it as a resident. His father, also a native of the city, was long and favorably known as one of its most trustworthy apothecaries. He was from the very beginning of his career an earnest and enthusiastic student, with somewhat of an outside bias for instrumental music, having in early life even filled the position of organist in one of the leading churches.

Dr. Sand's name was long associated with the New York College of Physicians and Surgeons as Demonstrator of Anatomy, Professor of Anatomy, and Professor of Surgery. Besides these positions, he was connected with nearly all the hospitals of that city, either as Visiting or Consulting Surgeon. His society membership was also extensive.

As an operator, Dr. Sands probably had no superior as a rapid, graceful and skilful manipulator—these qualities added to an almost unerring judgment and a certain diagnostic instinct, gave him a fame, which out-leaped the barriers of his home. His success as a laparotomist was almost unique, and there were but few cases of appendix vermiformis disease in his native city or environs which were not in some way brought to his notice.

Of a marvellous industry, and unimpeachable punctuality conjoined with a devoted loyalty to his profession, and an ever-present modesty, he was a favorite consultant with his brethren far and near. His reputation certainly rests upon a very secure basis.

MISCELLANEOUS.

A DIPHTHERIA SCARE prevails at Alden, Iowa, and the town schools have been closed.

DR. D. HAYES AGNEW will, it is reported, soon resign the Chair of Surgery in the University of Pennsylvania.

CONGENITAL DEFECTS.—Dr. R. R. Williams, of Manning, Ia., informs us that in October, 1888, near Manning, a child was born with but *one* hand and wrist.

BAD MEAT IN OMAHA.—The Omaha Meat Inspector's report shows that 3,485 pounds of diseased meat and six gallons of oysters have been condemned during the past month.

NORTH CENTRAL ILLINOIS MEDICAL ASSOCIATION.—The fifteenth annual meeting of this Association will be held in the M. E. Church, LaSalle, Ill., on Tuesday, December 4, 1888, at 10:30 A.M.

THE SOUTHERN ILLINOIS MEDICAL ASSOCIATION met at Duquoin on Nov. 15. On the second day, after an interesting and profitable meeting, the Association adjourned to meet in Metropolis on June 15, 1889.

DEATH OF AN ALLEGED CENTENARIAN.—Mrs. Hannah Sharkey, the oldest woman in Ohio, died at Youngstown, Ohio, a few days ago. She was said to have been 111 years old, having been born in Cork, Ireland, in 1777.

UTICA MEDICAL LIBRARY ASSOCIATION.—The following are the officers for the ensuing year: President, Dr. J. G. Kilbourn; Vice-President, Dr. Chas. J. Wagner; Secretary, Dr. D. C. Dye; Treasurer, Dr. H. Quin.

SOUTH KANSAS MEDICAL ASSOCIATION.—The twenty-sixth semi-annual meeting of the South Kansas Medical Society met in Hutchinson on November 13. There was a large attendance of leading physicians from all over the southern portion of the State.

SCARLET FEVER.—A dispatch from Jamestown, Dak., says that an epidemic of scarlet fever is raging there. Churches, Sunday-schools and public schools have been ordered closed during the prevalence of the disease. A number of deaths have already occurred.

A PROBABLY FATAL ACCIDENT to Dr. Nathan Rogers, of San Francisco, occurred on November 2. His horses ran away, overturning the carriage and throwing Dr. Rogers out. His head struck the curbstone, resulting in a fracture of the skull which is pronounced fatal.

CREMATORIES.—At the congress of the advocates of cremation recently held in Vienna it was stated that there are throughout the world fifty crematories, half of which are in the United States, twenty in Italy, and one each in Germany (Gotha), England, France and Switzerland.

A SCHOOL OF DENTISTRY FOR NEGROES, we learn from a Chicago newspaper, has been established in Nashville, probably as a department of the Meharry Medical School. The Meharry School and Leonard Medical School, of Raleigh, N. Ca., are doing good work—better than the majority of medical schools for white people.

LEPROSY IN DAKOTA.—There is a case of leprosy at Harold, Hughes county, Dak. The subject is the child of Mrs. Bausum, who was a missionary to China when the child was born. The case was examined in New York a year ago and pronounced to be one of leprosy. The members of the afflicted family are allowed no communication with the neighbors.

POWER OF THE IMAGINATION.—DR. DURAND, wishing to test the effects of the imagination on health and disease, experimented on a hundred patients, to whom he gave a dose of sweetened water. Fifteen minutes after he entered, apparently in great excitement, and announced that he had made a mistake, having administered a powerful emetic, and he directed that preparations should be made accordingly. Eighty out of the hundred patients were thoroughly ill, and exhibited the usual results of an emetic.

ARCHIVES OF GYNÆCOLOGY.—Seven hundred and twenty-eight is the record in numbers of the articles printed during 1888 in the *Archives of Gynæcology* on the special subjects of its title. It is the aim of the editors to publish all current thought in these departments of medical knowledge. The publishers, Leonard & Co., 141 Broadway, New York, do not send sample copies, but if you are not pleased with the first number it may be returned and the order erased. Subscription \$3.00 per annum. Payment is not asked till end of the year.

THE CAUSE OF ILL-TEMPER has been discovered by a dress-reform lecturer, who does not consider it an evidence of bad disposition. She says that "oftener than not it is owing to bodily discomfort proceeding from improper dressing, and that wives would all be sweet-tempered if they were properly attired and took sufficient exercise." There is probably a good deal of truth in this. Improper and uncomfortable dress and indigestible food are sufficient to cause ill-temper; and if ill-temper be given the rein while food is taken indigestion will result sooner or later.

"ELECTRIC PROSTRATION" is the name given to a disorder which troubles workers under electric lights. Severe cases are reported from Creusot, France, where an electric furnace is used for quickly heating metals. The light exceeds 100,000 candle power, and the men suffer from it, not from the heat. After one or two hours the workers have a painful sensation in the throat, face, and temples, the skin becomes copper red, and an eye irritation begins that lasts forty-eight hours, the discharge of tears being copious. After five days the skin peels off. Dark-colored glasses somewhat mitigate the effects of this tremendous light, but not entirely.

CONSULTATION BY TELEGRAPH.—The Canadian Pacific Railway Company's telegraph was on Nov. 18 brought into service in a way that not only afforded a good illustration of the extent of the system, but furnished a unique example of the possibilities of modern science. Lord Ennismore, heir to the Earldom of Listowell, is lying at the point of death in the hospital at Victoria, B. C., with typhoid fever. Through the aid of Sir Donald A. Smith, who is now in London, a telegraph circuit was formed from London to Victoria by the Mackay-Bennett Cable and Canadian Pacific Railway telegraph, and Sir Andrew Clarke, the distinguished London physician, was placed in direct consultation with Dr. Hannington in Victoria. A conversation lasting three hours, concerning Lord Ennismore's condition, was carried on. An unbroken circuit was worked from Victoria to the cable office in New York, where the telegrams were repeated to London. Replies were received in three and four minutes.

HOMICULTURE.—A writer in the *Nineteenth Century*, taking the cue of the impulse to discuss human culture, makes some suggestions under the heading "Homicul-

ture." He believes a good deal could be done by directing public attention to the laws that underlie the improvement of stock. He also urges that before a marriage permit is allowed parties should be compelled to submit to a medical examination, to show that they are not laboring under hereditary diseases. Beyond this he would have the absolute prohibition of habitual criminals from propagating their kind. These suggestions have been to some degree urged before by Dugdale, but they are timely. No question is of more importance than the improvement of humanity. We have traced our ills to heredity. Our remedies must correspond. Probably all suggestions at present will be crude and premature, but it is nonsense to suppose an evil exists without a possible cure.

DIPHTHERIA CARRIED BY A TURKEY.—A fowl with diphtheria was brought to the house of a veterinary surgeon on April 24, and died on the 29th. The feeding and nursing of the bird devolved on a lad aged 14, who was assisted by his brother, aged 5. On the evening of May 11 the writer was called to see the little boy of 5, who had been poorly for a day or two. He had enlarged cervical glands on the left side, which had come on rapidly. He was a delicate little fellow, with fair hair and anæmic aspect. The fauces were more or less covered with diphtheritic membrane, the left tonsil more especially. Under the administration of biniodide of mercury and iron the throat symptoms cleared up and the child made a good recovery. On the day after this case was first seen the boy who fed the fowl was very feverish and had similar patches over his fauces, but not to the same extent as his brother. A sister, aged 9, had also a similar explosion on the fauces. On the 18th the mother, who nursed them, was attacked and was similarly treated. They were all kept well up with beef-tea and stimulants.—*British Medical Journal*.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from November 10, 1888, to November 16, 1888.

By direction of the Secretary of War, the retirement from active service this date, by operation of law, of Col. Elisha I. Bailly, Surgeon, under the provisions of the Act of Congress approved June 30, 1882, is announced. Col. Bailly will repair to his home. Par. 1, S. O. 266, A. G. O., Washington, October 14, 1888.

By direction of the President, Lieut.-Col. Basil Norris and Major Henry R. Tilton, Surgeons U. S. A., are detailed as members of the Army Retiring Board appointed to meet at San Francisco, Cal., by War Department order dated October 27, 1888, published in S. O. 253, October 30, 1888, from Hdqrs. of the Army, vice Col. Elisha I. Bailly, Surgeon, and Capt. John J. Cochran, Asst. Surgeon, hereby relieved. Par. 13, S. O. 261, A. G. O., Washington, November 8, 1888.

Major Ely McClellan, Surgeon, is relieved from duty at Jefferson Bks., Mo., and will report for duty at Chicago, Ill., as attending surgeon and as examiner of recruits. Par. 13, S. O. 261, A. G. O., Washington, November 8, 1888.

Major John H. Bartholf, Surgeon, is relieved from further duty in the Dept. of Texas, and will report to the commanding officer at Plattsburgh Bks., N. Y. Par. 15, S. O. 26, A. G. O., Washington, November 8, 1888.

Asst. Surgeon W. H. Arthur, upon being relieved by Acting Asst. Surgeon J. L. Ord, will proceed to comply with par. 21, S. O. 250, c. s., Hdqrs. of the Army. Par. 5, S. O. 123, Hdqrs. Dept. of Ariz., Los Angeles, Cal., November 5, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 17, 1888.

P. A. Surgeon Robert Swan, ordered before Retiring Board 19th inst.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, DECEMBER 1, 1888.

No. 22.

ORIGINAL ARTICLES.

TRACHEOTOMY IN PSEUDO-MEMBRANOUS LARYNGITIS.

Read in the Section on Diseases of Children, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY CHARLES G. JENNINGS, M.D.,
OF DETROIT, MICH.

In the city of Detroit during the year ending May 31, 1887, there were recorded in the health department eighty-two deaths resulting from membranous croup, and thirty-eight deaths from diphtheritic croup, a total of 120 deaths from pseudo-membranous laryngitis.

A certain number of cases of pseudo-membranous laryngitis, classed as diphtheria cannot, of course, be included, and for this reason the number given is probably a little below the correct one. During this period, as learned from careful inquiry of the physicians of the city, there were not more than fifteen operations of tracheotomy and intubation performed for the relief of this disease. It will thus be seen that in that city, only one child in eight suffering from laryngeal stenosis, had given to it one of the only two therapeutic measures that would give it a chance for its life.

Although in some communities, operative interference in pseudo-membranous laryngitis may be more popular than in Detroit, it is probable that the figures from that city fairly represent the relative number of operations to cases of pseudo-membranous laryngitis in the large cities, while in the country the relative number is much lower.

Thus, in the year 1884, the mortality from croup alone, in twenty cities of the United States, with a population aggregating 7,051,000 was 2,819. Including the many deaths returned as diphtheria, diphtheritic laryngitis, etc., it will be seen that the annual mortality from pseudo-membranous laryngitis in the United States must be at least 6,000. So far as I learn, the latest published collection of statistics of tracheotomy and intubation performed in this country does not aggregate 2500 cases.

Operative interference, then, in pseudo-membranous laryngitis is not popular.

Considering the frequency of croup, its great mortality when left to medical treatment alone,

and the average percentage of recoveries after operation, there is no single operation in surgery that can save so many lives as tracheotomy, and it is difficult to understand why the profession is so slow to take it up.

Of the various objections to the operation, real and imaginary, which have been raised from time to time, and which evidently still hold sway over the minds of many practitioners, it is unnecessary for me to speak. They are familiar to you, and have been refuted by able writers, and the facts remain that pseudo-membranous laryngitis, when it has reached the stage demanding operative interference, is almost invariably fatal, and that tracheotomy or intubation can save from 20 to 50 per cent. of the cases operated upon. With such statistical evidence in its favor, arguments against operative interference in croup are powerless.

The objections to tracheotomy are no greater than the objections to many other surgical operations, and if applied to them would put an end to operative interference in all grave conditions. In the laryngeal surgery of the adult such objections have no weight, as we find in all diseases attended by laryngeal stenosis, tracheotomy is performed either as a palliative or curative measure. Even in carcinoma of the larynx, when nothing can be gained but a little prolongation of a miserable life, it is always performed.

I believe, then, that if croup were a disease of adult life instead of childhood, tracheotomy would be one of the most common operations in surgery. Children with this disease unable to demand relief, fall victims to the sentimental sympathy of their parents, or the hesitancy of their physicians. Too often it happens that the physician proposes the operation, the patients object, and, by his half-hearted advocacy, the physician encourages the objection. In my short experience I have seen this happen so many times that I have come to look upon it as the chief reason for the infrequent performance of the operation.

I fully realize the difficulties which surround the physician when he is urging operative interference. It is an emergency for which parents are rarely prepared and they instinctively reject it. The physician's duty is not done when he

simply proposes the operation and then takes this instinctive objection as final. To the grief-stricken parents, the average chances of recovery after either intubation or tracheotomy seems very small indeed, and hardly worth the trial, and it is our duty to show, by a frank and hopeful statement of the facts, the great value of the operation, and the earnest surgeon fully believing in this, but rarely will fail to overcome opposition.

Until the introduction of intubation by the remarkable labors of Dr. O'Dwyer, tracheotomy was the only surgical procedure for the relief of croup. The indication for the operation was the presence of laryngeal stenosis, and the physician had to determine only the degree of obstruction which made the operation imperative. Now, to him skilled in the performance of both operations, and confronted by dangerous laryngeal stenosis from croup, the question arises, shall intubation or tracheotomy be made?

The most recent systematic writer on croup, Dr. Geo. S. Gay, (Reference Handbook of the Medical Sciences, Article Croup,) says of the results of tracheotomy in America: "The statistics of results from the operative treatment of croup are very extensive, and those of late years, in America, are pretty uniform in their character. The formidable array given to the profession by the arduous labors of Mastin, Cohen, and many others, comprising over 11,000 cases as collated by Agnew, shows that from one-fourth to one-third of the cases of tracheotomized croup recover. Cohen's success has been remarkable. He reports 110 recoveries in 166 selected cases, most of them occurring in private practice. The experience of Jacobi, Cheever, Ripley, and many other American surgeons, while not as favorable as that of Cohen, is yet very satisfactory, about one-third of their cases terminating favorably." Dr. Gay adds his record of eighty six cases with twenty-nine recoveries, (33 per cent.), and the record of the Boston City Hospital 491 cases with 124 recoveries, (25 per cent.).¹

The most complete statistical record of intubation is that presented to the recent International Congress by Dr. F. E. Waxham, and gives 1,007 cases with 266 recoveries (26.07 per cent.).

From these figures it will be seen that the results up to the present time show intubation as a life-saving operation in croup to be inferior to tracheotomy. It is not improbable, however, that with fuller experience with intubation the instruments and the method of use may be so perfected as to give results equal to tracheotomy.

Some of the faults of the method are mechanical, and doubtless will be overcome; others I think are inherent to it and insurmountable.

The ease and rapidity with which intubation

can be performed, the ready consent that is usually given by parents, and the comparatively simple after-treatment, will continue to make it the favorite operation with many physicians. But leaving out of consideration these decided but sentimental advantages, and looking at the question only of the comparative life-saving power of the two operations, is it not possible that they can be made allies in the surgical therapeutics of croup? Is it not possible that in certain conditions, and in certain classes of cases each operation has special features that give it advantages over the other? In other words, can not the indications for tracheotomy be formulated anew, and with especial reference to its relation to intubation?

I shall not presume fully to indicate the distinct provinces of the two operations. Indeed, with our short experience with intubation, especially in its relation to tracheotomy, that is not possible; only the future accumulation of data will enable us to establish these points. I shall give simply the rules that I have framed for my own future guidance, and formed almost entirely from my own experience, and I offer them simply as a contribution to the settlement of the question.

My experience with the two operations is as follows:

To the time I commenced to perform intubation, about August 1, 1886, I had performed thirty-four tracheotomies with seventeen recoveries. Since then, I have made three primary operations, with one recovery, and five tracheotomies secondary to intubation with no recoveries.

To the present time, I have performed intubation nineteen times, with two recoveries. Two of the cases of intubation were infants 12 months old, and in the most unfavorable condition for operative interference. Three others were of such character that there was no hope of anything but temporary relief of the dyspnoea; two of them were suffering with grave septic diphtheria, and one had croup secondary to grave scarlatina. The remaining 14 cases averaged about the same as those on which I have performed tracheotomy.

In determining the comparative life-saving value of intubation, the three last cases, and perhaps the whole five, could very properly be omitted, as I should not have performed tracheotomy upon them. I cannot agree with some writers, who hold that dangerous stenosis of the larynx is an indication for tracheotomy regardless of the general condition of the patient. It seems hardly justifiable to subject a child suffering from almost certainly fatal septic diphtheria, to the additional pain of tracheotomy, merely to prolong its life a few hours. The performance of such operations accomplishes nothing for the patient, and often does irreparable injury to the operation itself. Unless I can offer some hope of recovery, I do not advise tracheotomy.

¹ Since writing the above I have learned that Dr. Gay was mistaken in giving American surgeons the credit of such a large percentage of recoveries. Some of the statistics he quotes were taken from European as well as American sources.

From a glance of this series of sixty-one cases, it will be seen that the results with tracheotomy approach those that have been obtained by the most successful operators, while with intubation they are very low.

For the sentimental reasons before mentioned, I have persisted in the O'Dwyer operation, hoping, as I gained larger experience, to show the good results obtained by some other operators, but with my long continued unfortunate results I do not feel justified in giving it, in the future, the preference to tracheotomy. Therefore I have formulated the indications for tracheotomy in its relation to intubation thus:

Intubation may be given the preference over tracheotomy:

1. In infants under the age of 18 or 20 months.

In infants of this tender age the results of intubation have been very good, and considering the difficulty of operation, and readiness with which these young patients succumb to the shock of severe cutting operations, the milder operative procedure is to be preferred.

2. In all cases in which, from the character of the symptoms, and the progress of the case, it is presumable that the exudate is limited to the larynx and the upper part of the trachea. My two successful cases were of this character. Neither coughed up membrane after the introduction of the tube, or had any difficulty in breathing, and each expelled the tube in a fit of coughing—one on the third, and the other on the fourth day.

3. Whenever from the hopeless character of the disease there is nothing to expect but to give relief from dyspnoea, and to make death comparatively easy.

Tracheotomy is to be preferred:

1. Whenever the pseudo-membrane is extensive.

The pseudo-membrane, even when expelled immediately after operation, almost always reforms, and necessitates the use of solvent substances in the trachea, either by the spray or by instillation. After intubation, local medication of trachea is almost impossible, while after tracheotomy, with the diseased trachea in sight and within easy reach, it can be done with perfect ease. Further, the expulsion of membrane and mucus, especially in an exhausted child, is very difficult after intubation, and the attendant can give no assistance; after tracheotomy the reverse is the case.

2. When, for any reason the operation is delayed until the patient is exhausted and deeply cyanotic, or is moribund. To give such patients a chance for recovery the relief of the dyspnoea must be perfect and immediate. The irritability of the reflex centres is so obtunded, and the muscular debility is so great, that the child does not make efficient efforts to clear its trachea.

The trachea and large bronchi are filled with soft membrane and mucus, and for several hours after the circulation is relieved the deeply congested mucous membrane pours forth a great quantity of secretion. So far as my observation goes, these children die in a few hours after intubation, worn out by imperfect respiration, and their ineffectual efforts to keep their tubes clear.

Case 1.—Boy, aged 2½ years. Moribund from severe dyspnoea of over twenty-four hours duration. Intubation 9 o'clock A.M. A little relief, but the tube filled up, and 11 o'clock A.M. the dyspnoea was again very severe. Tube removed and reinserted. No relief; death at 1 o'clock P.M.

Case 2.—Girl, aged 6 years. Moribund from eighteen hours of severe dyspnoea. Intubation at 1 o'clock P.M. A little relief, but all efforts failed to make the child clear the trachea. Tracheotomy at 2 o'clock P.M. with the O'Dwyer tube *in situ*. Expulsion of great mass of membrane and mucus with perfect resuscitation. Child died of pneumonia on the fourth day after the operation.

Case 3.—Child aged 2½ years. No membrane in the pharynx. Grave dyspnoea commenced at 5 o'clock A.M. Cyanotic at 9 o'clock A.M. Intubation. Respiration was fairly easy, but the child did not rally perfectly. The pulse was very weak. The tube commenced to fill in an hour, the child could not clear it, and died asphyxiated at 2 o'clock P.M.

Case 4.—Child, aged 4 years. She had been cyanotic for several hours. Intubation at 6 o'clock P.M. There was great relief of the dyspnoea, but the trachea was never perfectly clear of membrane. She began to fill up during the night and died eighteen hours after the operation.

Case 5.—Girl, aged 8 years. No membrane visible in the pharynx, but there was a little bad smelling discharge from the nose. She was cyanotic when I saw her. Intubation at 3 o'clock P.M. Expulsion of a large mass of membrane and relief from dyspnoea. The trachea began to fill in a few hours, and she died during the night.

All of these cases were seen in consultation. They were very similar in that all of them were dying from asphyxia alone. In all the pharynx was clear, and one only, *Case 5*, showed any constitutional signs of diphtheria. The condition of *Case 3*, was the most desperate of all, and she was relieved by a secondary tracheotomy and lived four days. In a number of tracheotomies that I have performed under equally desperate circumstances, the operation has never failed to give complete relief, and some of the children have recovered. But one child in my series of primary tracheotomies died within forty-eight hours after the operation. In these urgent cases intubation may be performed as a preliminary

measure to give time to properly prepare for tracheotomy. The temporary relief will give time, also, for a deliberate operation. The internal tube should be left in place and extracted when the trachea is opened. It greatly facilitates the operation.

3. In all cases in which the constitutional condition of the patient makes medication and feeding by the stomach imperative. The well-known difficulty of properly nourishing children after intubation may seriously compromise the result when we have to do with the grave debility of diphtheria.

It will not be possible, always, to definitely place cases of croup into one or another of the above classes. Many times the physician will be in doubt as to which operation is to be preferred. In deciding he should be guided by his relative success with the two operations. He who can obtain the average good results of intubation may try it before resorting to tracheotomy. The surgeon who has 30 per cent. or more of his cases of tracheotomy recover, should in justice to his patient select that operation. The utility of tracheotomy after intubation has been performed, and has failed to give relief, is a subject upon which there has been but limited observation. Five cases have come under my care.

Case 1.—Girl, aged 6 years. No membrane in pharynx. Intubation on the evening of the third day of the dyspnea. She passed a quiet night, but the breathing was continually somewhat embarrassed, and at times when the tube was partially filled with secretion the dyspnea was quite severe. The next morning the child's temperature was $102\frac{1}{2}^{\circ}$ and the pulse was 120. She breathed hard, was unable to clear the trachea, and was commencing to show signs of exhaustion. At 10 o'clock A.M., the tube was removed and replaced. A large piece of membrane was dislodged, after which she breathed easier. In an hour or two, however, the trachea again filled. She struggled hard for several hours before I was summoned. I saw her at 7 o'clock P.M., and immediately made a tracheotomy. She was perfectly relieved, and breathed easily until her death from exhaustion twelve hours later. Dr. W. P. Northup in a review of this case ascribes the death to pneumonia. I did not suspect it at the time.

Case 2.—Oct. 17, 1886. Girl, aged 9 years. Intubation at 10 o'clock P.M. Relief for eighteen hours. The trachea then began rapidly to fill. Tracheotomy at 4 o'clock P.M.; complete relief. Death on the third day from extension of the membrane to the bronchi.

Case 3.—Detailed as *Case 2*, of the cases illustrative of the effects of very late intubation.

Case 4.—April 9, 1887. Boy aged $2\frac{1}{2}$ years. Intubation at 9 o'clock P.M. Relief for three days when the membrane began to extend and to fill

up the trachea. Tracheotomy on the fourth day. Complete relief, but death three days later from bronchial croup.

Case 5.—December 29, 1887. Girl aged 5 years. Intubation at 5 o'clock P.M. Complete relief. The tube filled the next day when it was removed and cleaned and replaced. This gave relief for a short time only. Tracheotomy on the second day. This operation gave but little relief and the child died in a few hours.

These five cases very well show the superiority of tracheotomy over intubation in combating the condition which gives rise to the dyspnea in croup. Tracheotomy not only will relieve all cases that intubation can, but it will do more. In four of the five cases intubation had failed to keep the respiratory tract free, and if left without further interference all undoubtedly would have died in a few hours. Tracheotomy gave them chances of life far beyond the power of intubation to do.

From the observation of these cases I should advise the performance of tracheotomy when intubation has failed to give relief, if the secondary dyspnea supervenes within a few hours. The first deposit of pseudo-membrane in the trachea is generally thin and pus-like, and but loosely attached to the mucous membrane. It is a *croupous* membrane in the *anatomical* sense. It is easily expelled after tracheotomy, and this operation certainly offers some chance of recovery.

If the secondary dyspnea be delayed for two or three days, it is then usually due to the deposits in, as well as upon, the mucous membrane. The pseudo-membrane is thick, tough and firmly adherent to the mucous membrane—it is *anatomical* diphtheria. With such a membrane filling the trachea and extending into the bronchi further operative interference is of no avail.

The surgical treatment of croup is often made useless by injudicious medical treatment before the operation. Medical treatment, is to a certain extent at least useful, and it would not be wise to entirely neglect it, but so few cases of pseudo-membranous laryngitis recover under it alone, that it is best to consider it of secondary importance. Upon operative treatment only should any reliance be placed, and the medical therapeutic of the disease should be selected with especial reference to it. If recovery takes place without operation, it should be looked upon rather as a fortunate accident, than an anticipated result. The most frequent error made, is in the too persistent use of emetics. They are often given until profound exhaustion is produced, and when the obtunded reflex centers refuse longer to act, they are stored up in the stomach, and when reaction takes place, produce violent gastro-intestinal irritation. Think of such a preparation for a capital operation upon the subject of a serious acute disease! With such preparatory treatment

what would be the result of other grave operations? Of late years it has been fashionable in some localities to administer large doses of calomel to croup patients—one or two drachms or more in twenty-four hours. These large doses have been given with the idea of promptly producing the constitutional effects of mercury. If this condition has a favorable influence upon the course of the disease, and the testimony of many able physicians and my own experience make it probable, it would appear more reasonable and scientific to administer a readily soluble salt of mercury, or frequent small doses of calomel, so that the physician can control the amount of the drug taken into the circulation, something that cannot be done when large doses of calomel are given. I have heard it asserted that this enormous dosage never produces salivation or other serious results. My experience has been just the opposite. Of four cases seen in consultation, and which had been treated in this manner, one died before time was given for the mercury to produce any effects; two died after tracheotomy had been performed, one partially and the other wholly, I believe, from the effect of the distressing salivation and the violent enteric catarrh; and one was suffering so greatly from the toxic effects of the drug that I refused to perform tracheotomy.

Apparently trivial details of operation and after-treatment so greatly affect prognosis, that to be successful in tracheotomy the physician should be a perfect master of them. During and after tracheotomy death threatens from every quarter, and the surgeon must make the best of the few conditions over which he has control. It is a great advantage to be able to select the time for operation and the best results are obtained from operations not too long delayed. Still, while a child is living it is never too late to operate. A skillful operator will open the trachea by deliberate dissection in six or seven minutes and when time presses in much less time, so that, so long as respiratory efforts are being made it will not be too late. The grave condition late in croup is generally the effect of asphyxia alone, and with the admission of air into the lungs, resuscitation usually is rapid.

It would unduly prolong this paper to give the details of tracheotomy; a few general remarks, however, may not be out of place.

The operation should be performed with the greatest delicacy and with all the deliberation the time will permit. The cut to the trachea should be made with as little tearing and mutilation of the tissues as possible. I find it can be made most carefully and quickly by avoiding almost entirely the use of a director or other instrument except the scalpel. With the child's neck over a small round pillow the tissues are so stretched that as the successive passes of the knife divide them, the edges of the wound automatically re-

tract. In the operation above the isthmus, the only tissues that cause trouble and delay are the veins, and the use of retractors or a director, or even the retraction of the edges of the wound with the fingers, empty them of blood and make them invisible. With successive gentle passes of the knife point, avoiding the veins, distended and in plain sight, as they present, the connective tissue lying next to the trachea can be quickly reached. Difficulty may be experienced here, as in this tissue lie imbedded dilated branches of the superior thyroid vein, branches of the superior thyroid artery and sometimes the crico-thyroid. The cutting through this dangerous layer of tissues must be very carefully done and it is often well to separate it partly by tearing. The method of Boze is very safe.

In opening the trachea I prefer to make a short cut in it, and before withdrawing the knife gently to introduce a slender retractor with a long beak, then to withdraw the knife, introduce another retractor, and to enlarge the incision either way with a probe-pointed knife. With the edges of the tracheal incision well separated by the retractors, respiration can go on while the operator is cleaning the trachea of mucus and membrane. There is usually no occasion for haste, and the canula can be carefully introduced when the trachea is clear. Many operators make the introduction of the tube the supreme moment of the operation, plunging it into the tracheal incision as soon as it is made, using the finger or some instrument as a guide. To this bungling method is due the inexcusable accidents of lodging the canula in the connective tissue alongside the trachea, and tearing the trachea, or its mucous membrane.

The canula should be so prepared as to cause the least irritation to the external wound, and the tracheal mucous membrane. This can be very well done by placing under the shoulder of the tube an apron of mackintosh cloth or oiled silk, and under that two or three layers of surgeon's lint or antiseptic gauze. This pad serves as a dressing to the wound, can be made fairly antiseptic, and protects it from the irritating contact of the metallic shoulder, and the secretion expelled from the tube. Another very important function it performs is to permit the easy play of the tube within the trachea during respiration, coughing and other efforts. The depth of the trachea from the skin varies much in different individuals, and as a result of inflammatory exudation. Variations in the thickness of this pad will give different lengths to the tube.

Pilcher, Cohen, Gay and other American writers have given to the profession such excellent articles upon the after-treatment of tracheotomy, that very little in addition can be said. The general indications to be filled, however, and the means at the physician's command to fill them,

cannot be too often repeated, as, in attention to these details above all others, lies the secret of success. After the operation the diseased mucous membrane of the trachea pours fourth a copious exudation of thick, tenacious mucus or pseudo-membrane. The inspired air quickly dries it and forms hard sticky masses that obstruct the newly made respiratory tract. These secretions must be kept fluid and the way clear for their expulsion. This is the chief indication in the after-treatment of tracheotomy. To accomplish it the essentials are:

To keep the apartment at a temperature of about 80° F., and the atmosphere loaded with moisture.

To administer remedies that are known to stimulate the tracheal and the bronchial mucous glands.

To keep over the tube a thick cravat of several folds of gauze or a piece of wet sponge, to further moisten and warm the in-going air.

To frequently change and clean the inner canula.

To use occasionally, in all cases, the steam-atomizer for twenty or thirty minutes at a time, and when the membrane forms fast and dries rapidly, to pour into the opening of the canula from one-half to three-fourths of the time a heavy steam spray of a mildly alkaline or solvent solution with the atomizer placed but a few inches from the canula.

Lastly, when, regardless of persistence in these measures, the trachea becomes obstructed, to remove the canula from the wound, and by instillation with a few drops of water, or with forceps, a feather or other instrument to search for and remove the obstructing mass, as would be necessary with any other foreign body.

Mr. Chairman, in bringing this very imperfect paper to a close, I wish to make a plea for more frequent operative interference in pseudo-membranous laryngitis. Whether it be intubation or tracheotomy that the physician may select is not a matter of importance so long as one is done. Without operative interference these children die, while with it a magnificent percentage recover. Every physician when confronted by a patient in the condition demanding tracheotomy, should have before his mind these eloquent words of Dr. Pilcher: "How long am I justified in deferring the application of a remedy which at once puts an end to grave sources of danger now present to my patient? The most approved methods of treatment have failed to arrest the course of the disease. There is a steady progression in its gravity. A possibility exists, however, that even at the last moment a favorable turn may take place and recovery follow. In all probability, nevertheless, it will steadily advance to a fatal termination. Shall I now give him the benefit of tracheotomy, with its unquestioned advantages,

or shall I wait yet longer? Each hour of waiting now will lessen rapidly the hopes which even tracheotomy affords. What is my duty to my patient? What other answer can there be than that *justice to my patient, justice to myself, fidelity to the profession I represent, all unite in demanding that NOW, early, before the development of conditions which will make any interference but a forlorn hope, tracheotomy should be done.*"

544 Jefferson Ave.

DOUBLE UTERUS AND VAGINA.

Read in the Section on Obstetrics at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, Ohio, May, 1888.

BY L. H. DUNNING, M.D.,
OF SOUTH BEND, IND.

Under the general title of double uterus and vagina I wish to consider the congenital malformations of the uterus described and classed by authors as uterus bipartitus, uterus unicornis, uterus bicornis, and uterus bilocularis, when one of these malformations is associated with a double vagina. My observation was directed to this subject something over a year ago, by having brought under my treatment a case of uterus bilocularis, associated with a double vagina. It was a case specifically described by Kussmaul under the name of uterus septus, vagina septa. Brief notes of my case are as follows:

Mrs. A., aged 37 years, married some months and never pregnant. Came to my office with her husband to consult me on account of something abnormal they had found about the genital organs. The following facts were elicited, viz.: Menstruation had begun when the patient was quite young, but had always been irregular and generally scanty. During the last two years they had been at times painful. Since marriage pregnancy had not occurred, but coition had not been painful and there were no symptoms pointing to serious uterine trouble.

Upon ocular inspection and digital examination the external genital organs were found normal and well developed. Upon separating the labia and looking into the *ostium vaginae* nothing abnormal would have been noticed upon casual examination. Upon close examination two vaginae were found, separated by a moderately thick septum extending from a groove between two cervixes to the introitus vagina. The right vagina was considerably larger than the left, and was undoubtedly the one used in coition. The finger entered this one readily, while the left one needed to be searched for. A cervix was found in each vagina and were normal in all respects except the left one was smaller, and both were shorter than normal. The probe entered the right uterine cavity 2 inches, and the left one 1½ inches. The points of the probe could not be made to meet and their

handles diverged slightly. No communication between the uterine cavities or vaginal pouches could be made out. By conjoined manipulation the uterus was found to be of normal size, except that the transverse of the body was greater, and there was a slight depression at the fundus, marking the division of the body of the uterus. That portion lying to the left of the depression was one-third smaller than that upon the right side.

About one month later the husband came to my office reporting that his wife had not had her menses, and that they thought her pregnant. Three months later she was seen by the writer and pregnancy found to exist. The labiæ and vaginæ had grown considerably, and were now of that livid hue sometimes indicative of pregnancy. The cervixes had enlarged and softened and the right side of the uterus had enlarged, so that it, with its contents, was as large as a normal pregnant uterus at the fourth month. The left side of the uterus had not correspondingly developed, it being apparently flattened out and lying like a molehill upon the left side of the impregnated uterus.

From this time on I saw the patient frequently, and became thoroughly convinced she would be able to effect delivery without operative interference. In due season labor came on in a normal manner. When I was called it had advanced well into the first stage. The right os was dilated to the size of a silver dollar, while the left one was nearly as large. The bag of waters protruded from the right os, and the foetal head was felt just within it. In another hour the right os was largely dilated with a large bag of water protruding from it. The left os was also large and I could determine the position of the foetal head through it as well as through its neighbor. It was found during this examination that there was a communication between the two sides half an inch above the internal os. The finger could be passed into one os through this opening and out the other os. The uterine septum had been torn and it was thought strongly probable that the head would tear the vaginal septum before it in its descent. This actually occurred. The second stage of labor was of four hours' duration and the pains were only moderately severe. At the vaginal outlet a band of the septum remained and was stretched antero-posteriorly over the centre of the foetal head and for a brief time retarded labor. By pushing the head back in the absence of pain this band could be pushed toward the left side, but not far enough to allow the passage of the head. Finally, after three or four pains, the band suddenly gave way, and the head was as suddenly born. The remainder of the child quickly followed, as also did the placenta. There was but little hæmorrhage or shock and the patient was at the end of labor in an excellent general condition. Strict antiseptic precautions were observed and at the end of two

weeks the patient had made a complete recovery.

When this case came under the writer's observation he began looking up the literature of the subject of double vagina and uterus, and found that contained in one language very meagre, and hardly satisfactory to one desiring to obtain a comprehensive knowledge of the subject. Todd's "Cyclopædia of Anatomy and Physiology" gives a brief but excellent anatomical description of congenital malformations of the uterus, but has little to say regarding double vagina. In the following works much valuable information may be found, viz.: Lusk's "Midwifery," Hart and Barbour's "Manual of Gynæcology," Fritsch's "Diseases of Women," Barnes' "Diseases of Women," and in Turner's articles in the *Edinburgh Medical Journal*, Feb., 1865, and May, 1866. The writer of this article has, by the invaluable aid of a physician having access to the Library of the Surgeon-General's office, collated and tabulated the histories of 97 cases of double uterus and vagina. Brief references to some of the facts thereby obtained may be of some interest. Before proceeding to this part of our subject a short anatomical description of the various forms of the malformations will not be inappropriate. Todd divides congenital malformations of the uterus into four groups.

1st. Uterus Bipartitus.—In this group the ducts of Müller are imperfectly developed, or undeveloped, and the result is a more or less complete absence of the uterus. The examples of complete absence of the uterus reported are believed by Todd to be cases in which the rudiments exist, sometimes with a fold of peritoneum lying behind the bladder. The concomitants of this condition are usually rudimentary ovaries and Fallopian tubes, a short vaginal cul-de-sac, a complete absence of the vagina, or in rare cases a complete vaginal pouch. In rare instances the ovaries will be found normal, and in still rarer instances there will be a pervious os communicating with the vagina, and the uterus, Fallopian tubes and ovaries sufficiently well developed to permit of conception and delivery. The presence of normal ovaries concomitant to rudimentary condition of the uterus may be understood when it is remembered that the "ovary is formed out of a separate portion of blastema of that from which the Wolffian bodies and excretive duct of the genitive apparatus are developed," so that the failure of growth of one does not necessarily involve a corresponding defect in the other. In this class is the greatest deviation from the normal development of the uterus.

2d. Uterus Unicornis, or the single-horned uterus, is the next in the order of the greatest departure from the normal in development. Here one uterine cornu retains the imperfect condition, while the other undergoes development, so that

¹ Todd's Cyclopædia of Anatomy and Physiology, vol. v, p. 678.

the uterus will consist of a developed and an undeveloped half, or there may be an entire absence of one cornu. Where a rudimentary horn is found this is then solid, or hollow, closely connected to its fellow or only joined to it by a pedicle, which may be either pervious or impervious. The ovary upon the side of the rudimentary horn may be absent, undeveloped, or normal. The Fallopian tube may be pervious or impervious. When the ovary is absent or imperfectly developed it is not unusual to find an absence of the kidney upon the corresponding side. In this group the vagina may be double or single. If it be double one side is likely to be rudimentary or much smaller than its fellow.

3d. *Uterus Bicornis, or Two-horned Uterus.*—This form of malformation is more frequently met with than either of the former ones. Here the uterine cornua generally develop symmetrically, yet with an imperfect junction of their lateral borders. There is in this class no evidence of plurality or duplicity of the uterus. The condition is due to defective development or failure to fuse of the lower extremities of the ducts of Müller, and a consequent conjunction of the two halves, as occurs in a normally developed organ. In some instances in this group there is no fusion whatever and there would appear to be two separate organs, and yet examination shows in every instance but a single ovary tube and round ligament for each horn, and thus is demonstrated the fact that the malformation is due to defective development, rather than to a duplicity of organs.

The uterus duplex bicornis and uterus didelphy's are subdivisions of this group, and they differ from each other chiefly in the degree of the separation of the cornua. In the latter the separation is complete, so that each cornu is capable of movement independently of the other. In this group, as a concomitant, the vagina may be single or double, as also may be the cervix and os. A rudimentary condition of one horn may exist.

4th. *Uterus Bilocularis.*—The slightest deviation from the normal will be found in this group. Here the uterine cornua are partially fused and may be equally or unequally developed. Usually a groove or fissure will mark the separation of the cornua, while the cavity is more or less completely separated into two parts by a septum. The vagina is also frequently divided into two parts by a septum. When this occurs there may be a cervix in each vaginal tube, or the septum may divide a single os into two parts. The writer's case was of this group, and in it the septum extended from the os vagina to the fundus of the uterus. Of the 97 cases the histories of which the writer has collected there were found examples of each one of the groups described. They were as follows:

Of uterus bipartitus	2 cases.
“ unicornis	3 “

Of uterus bicornis	52 cases.
“ bilocularis	23 “
Uterus single, os, neck and vagina double	2 “
Unclassified, except as double	15 “

Of these cases the vagina was double, *i.e.*, divided into two parts, in 77 instances; single in 5; absent in 1; and not stated, but probably double, in 16; and there was atresia of one vagina in 6 cases. Some interesting and instructive facts relative to pregnancy were obtained. Of the 97 women having the malformation, 47 were married, and those who bore children whose marriages were questioned were 3, thus making in all 50 possible mothers. Of these, 42 women were pregnant 76 times. There were 42 natural deliveries, and 13 difficult labors. The means of relief in the difficult labors were forceps in 7; turned in 1; septum of the vagina cut in 4; and in 1 there was rupture of the uterus. The number of deaths at, or as a result of labor, was 4; 1 of convulsions; 1 of rupture of the uterus; 1 cause not stated; and 1 of puerperal fever three weeks after delivery. Fourteen women miscarried 18 times.

It is interesting to know which one of the varieties of malformation we have described is most liable to become pregnant and what is the result in each case. Is the one-horned uterus less liable to become pregnant than the uterus separatus, and if pregnant is it more liable to result in miscarriage, or is labor more liable to be difficult or disastrous? In our list no instance of a pregnant uterus bipartitus is found. Pregnancy occurred in uterus unicornis in 3 women; in uterus bicornis in 21 women; in 12 women having uterus bilocularis; in 4 in which the uterus was single, but vagina double; and in 2 of unclassified form. Of the cases of artificial delivery 6 occurred in uterus bicornis; 2 in uterus bilocularis; and 1 unclassified form.

These facts are what we would be led to expect when we remember the peculiarities of each class. The one-horned uterus is equally surrounded by muscular tissue, and will nearly or quite right its position in the pelvis before the end of the period of gestation. In uterus bicornis the deficiency in muscular tissue upon the inner aspect of the organ, or inability to rightly employ that tissue, either or both tend to make labor more difficult or protracted. There are two factors operative in removing the axis of the plane of the uterus from the axis of the plane of the vagina, *viz.*: The commissure (Todd) frequently placed between the separated horns of the uterus, the position and thickness of which determining the angle at which the diverging horns will meet in the grooved uterus, the action of the round ligament which being attached to one horn only of the uterus tends to keep it well outward in the process of development.

But what influence do the different forms of malformation have upon the ability of the preg-

nant woman to carry the foetus to full term? Our data is not sufficient to enable us to settle this question beyond controversy, yet the facts we find are quite suggestive.

Of the uterus duplex bicornis there were 6 pregnancies and 1 miscarriage; of the uterus bicornis, 5 pregnancies and 1 miscarriage; of uterus didelphys, 10 pregnancies and 5 miscarriages; of uterus bilocularis, 12 pregnancies and 6 miscarriages; of uterus unicornis, 3 pregnancies and no miscarriages. The large percentage of miscarriages in uterus bilocularis is due quite largely to the lodgment of the ovum in the decidua vera in the superior posterior portion of the uterine cavity near enough the septum so that as the placenta develops it spreads over upon the septum and hæmorrhage, or failure of growth frequently occurs, and miscarriage follows. The reason of the frequent abortions or miscarriages in uterus didelphys will, I believe, be found (a) in the unfavorable position the impregnated uterus gradually assumes as the period advances, which position interferes with its circulation, and (b) in the sympathetic excitement induced by the menstruation of its fellow.

What are the effects of the abnormalities under discussion upon menstruation? Menstruation is a function requiring for its normal performance a complex system of organs which must be perfectly formed, in perfect working order, and each bearing its proper relations to all others. Here we have abnormalities affecting a part or the whole of the organs of the menstrual system, and the abnormalities are those of development. The organs affected are chiefly the uterus and vagina, for it is not common to find errors in the formation of the ovaries in cases of double uterus and vagina even in the highest types of the malformation, for reasons already stated. To be more specific, there must be, in order to perfect menstruation, a normal ovary, a pervious tube, normal uterine mucosa, and a pervious os and vaginal tube. These are not always present and when they are not menstrual disturbances will arise.

The most disastrous of these disturbances we have found in our studies are hæmatomatra; the menstrual fluid being retained in the uterus in consequence of an impervious os, and hæmatocolpus resulting from atresia of one vagina. The former of these most frequently occurs in cases of uterus bicornis, but it is sometimes met with in a rudimentary horn which contains normal uterine mucosa and no communication between the developed and undeveloped horn. We found records of many cases in which menstruation was irregular, scanty, or painful, and some striking anomalies, some few of which may be mentioned. In one instance the patient gave birth to twins at six months from one uterus, menstruated regularly from it three times and then gave birth to a perfectly formed child from the other uterus. In

another instance menstruation occurred from both uteri and both became pregnant. Abortion occurred, and it was then ascertained that one uterus had been impregnated three months while the other only one month. It was also learned that both uteri may menstruate at the same time, or that they may alternate in the performance of the function. These facts all tend to emphasize the importance of the place the uterus occupies in the system of organs involved in the performance of the function of menstruation. If with a single uterus and two ovaries menstruation occurs normally every four weeks, and if with a double uterus, each half having a single ovary, the menstrual flow occurs from each every four weeks it would seem quite conclusive evidence that the uterus, and not the ovary, is the most important part of the menstrual system and, it would too, the writer thinks, tend to prove the cyclic nature of this functional manifestation, with the uterus as the center of the system.

What effect does the duplex condition of the vagina have upon the mature woman in respect to menstruation, married life, pregnancy, and delivery? Upon these points our text-books have little to say, but the writer has found in his investigations this is one of the most important parts of his study. Atresia of one or both vaginæ will lead to the formation of a hæmatocolpus. The suffering attending this pathological condition is great, while the dangers to life incident to operative procedures for its cure are also great. The subjects of duplex vagina are usually ignorant of its existence until after marriage, when they find coition painful or impossible. Occasionally a physician will be confronted during the progress of a difficult labor by the presence in the vagina of a firm septum, or he will recognize the existence of a double vagina in which there is a thick, firm, fleshy septum. In the list of cases we have studied (97 in all) we have found the septum described as complete, *i. e.*, extending from the os-teum vagina to the cervix uteri, in 72 instances. The following facts appear respecting the septum, viz.: The septum delayed labor in 2 cases, was cut away during labor in 3 cases, torn away in labor in 5, divided before labor in 1, divided for painful coition in 6, for relief of diseased conditions in 4, sloughed away after delivery in 1, and was divided for atresia of the vagina in 6 cases. In one of the patients having vaginal atresia of one side the foetus passed into the occluded vagina and had to be removed by incision.

It will be seen by this statement that the septum was an important factor in labor in 13 patients, or in more than one-third the women who were confined, as in only 36 of the child-bearing women was there a vaginal septum. It is pertinent to inquire what shall be our mode of procedure respecting this septum? If seen before pregnancy in the married woman it should be, if thick, firm

and unyielding, incised, excised, or severed by the galvano cautery. As a rule, the writer believes, it will be the best surgery to excise the septum and suture the edges of the mucous membrane, in order to avoid as nearly as possible resulting cicatricial tissue in the vagina. If an incision alone is used it should be crucial, in order that the incised surfaces may not come in contact and adhere. Should the patient be not seen until after pregnancy has occurred the operative procedure is best delayed until the fourth or fifth month.

There is nothing to contraindicate the severing of the septum during labor if it be found materially retarding labor. It is better to cut the septum than to allow it to be torn away as it was in the writer's case. Fortunately his inactivity did not entail upon his patient disaster or serious results, but he would not again hazard the risk of such an occurrence. The best operative means for the relief of hæmotocolpus has not yet been decided upon. Emmet boldly advocates free incision, immediate evacuation of the retained fluid and antiseptic irrigation of the cavity. The weight of authority seems to be against this method and in favor of puncturing the tumor and slowly draining off the retained fluid. Of the 3 cases in our list all were punctured; one died, one recovered, and in one the result is not stated, though it probably recovered. Similar results are shown in the three cases of hæmatomatra in the list. The writer has in his possession the histories of 20 cases of hæmatomatra treated by various methods and cannot forebear anticipating his paper by stating that by far the highest rate of recoveries is found in those instances in which a free incision was made and free drainage and irrigation employed.

Our conclusions are

1. Congenital malformations of the uterus and vagina are of more frequent occurrence than the experience of one man would lead him to suppose.

2. Of the forms of malformation of the uterus associated with double vagina the uterus bicornis is the most frequent, 51.5 per cent. belonging to this class.

3. Except in uterus bipartitus the fecundity of the woman having the malformation is not materially diminished.

4. The ratio of difficult labors is greater than in those having normal uteri. 24.1 per cent. were difficult labors; 28.5 per cent. being of uterus bicornis, and 16.66 per cent. being of uterus bilocularis.

5. The forms of malformation in which abortion or miscarriage is most liable are uterus didelphys and uterus bilocularis. In these 50 per cent. of the cases so resulted.

6. Both sides of the uterus may be pregnant at the same time and the foetus in each in the same stage or different stages of development.

7. Disordered menstruation is of frequent occurrence. Atresia of one vagina will be found in about 8 per cent. of the cases. Stenosis of the cervix uteri is sometimes present.

8. Menstruation will take place if there be even a small amount of uterine mucosa and a normal ovary, and if there be not a free exit of the menstrual fluid hæmatomatra will result.

9. Menstruation may occur simultaneously from both uteri or they may alternate in the performance of this function. In the latter case it may appear every two weeks, and from alternate sides.

10. The two preceding conclusions show the important part the uterus plays in the performance of this function of female life.

SOME OBSERVATIONS, AFTER 1,000 OPERATIONS FOR HÆMORRHOIDS.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY JOSEPH M. MATHEWS, M.D.,

PROFESSOR OF PRINCIPLES AND PRACTICE OF SURGERY AND DISEASES OF THE RECTUM, KENTUCKY SCHOOL OF MEDICINE, LOUISVILLE.

Having for a number of years given special attention to diseases of the rectum, I have thought that this paper could be made more or less interesting by recording my individual experience in the operations looking to the relief of hæmorrhoids. I have based my conclusions from operations done upon patients taken indiscriminately from hospital, dispensary, and private practice. Believing that an individual experience is worth much in forming an estimate, I give mine for what it is worth.

Internal Hæmorrhoids.—This I believe to be the most common of all rectal affections, though Mr. Allingham believes fistula in ano to be. In making this estimate I rule out the diagnoses made by patients, who usually pronounce any and all affections of the rectum or anus to be piles.

Causes.—With deference to our French *confrères*, I am satisfied that constipation is the chiefest among the causes of hæmorrhoids. Nor can I subscribe to the belief that through the dissections made by Verneuil we find sufficient evidence in the peculiar distribution of the veins, and the course they take in the coats of the rectum, to disprove the theory that constipation, sedentary occupations, drastic purgatives, prolonged use of enemata, etc., can institute true hæmorrhoids. His idea that the superior hæmorrhoidal veins pass through "veritables boutonnières musculaires," and that these muscular button-holes have the power of contracting and causing such stasis and congestion in the superior hæmorrhoidal veins as to cause the "primum mobile" in the formation of internal piles, I do not believe. Upon this theory was dilatation of the two sphincter muscles suggested as a cure for internal hæmor-

rhoids. Whatever might have been its success in France, I am sure it has failed of its object in America. This failure I attribute to the unscientific basis upon which it was practiced. In a word, then, I believe hæmorrhoids to be veritable tumors, in the formation of which the arteries as well as the veins play a part. The mucous membrane of the rectum being movable, is everted at stool. Anything that impedes the return of blood will congest the part. This, sufficiently kept up, ends in the plastic deposit of inflammation constituting the material for the formation of piles. I quite agree with Verneuil, that the superior hæmorrhoidal veins are connected with the portal system, and in the main form internal hæmorrhoids, and that external piles are formed from the external and middle hæmorrhoidal which are not connected with the portal venous system, and hence the two venous systems, portal and general, are practically distinct at this point. This proposition is admitted, and yet we cannot admit the absolute separation of the portal and general venous systems. I have been thus explicit on this point from the fact that confusion has arisen over it.

Sex.—In my experience men are the oftenest affected with piles. This I account for on the basis that the portal circulation is in the male oftenest interfered with. This will outweigh the fact that childbearing and displacements of the uterus are pregnant causes of piles in females.

Age.—A number of authors cite cases of piles in infants. I have never witnessed the affection in children under 10 years of age. Old age is mentioned as most favorable to the disease. This has not been my observation. Old people frequently mention that during adult life they were so affected, but as the years grew apace, the piles disappeared. It is eminently a disease of middle life.

Classification.—The usual classification of piles is mystifying, to say the least. No anatomical difference can be drawn between the so-called venous and the arterial pile, and the commonly designated "capillary" pile frequently uncovers an artery of good calibre. The terms external and internal are quite sufficient for all practical purposes as applied to piles, for, as Mr. Erichsen says, "all internal piles should be tied, and all external piles should be cut off."

Dangers.—The only real danger from internal piles is hæmorrhage, and this can scarcely apply to any save the small incipient pile. The friction to which larger tumors are subjected causes such thickening of the mucous coat that bleeding, as a rule, is impossible. Sometimes large hæmorrhoids prolapse and slough, hence require surgical interference, but this could only occur from an indiscretion.

Operations. Injections of Hæmorrhoids.—For a number of years the injecting of hæmorrhoids

with carbolic acid seemed to be a favorite plan with many in the profession. Being a discovery of the itinerants, it soon found favor with the laity, more because of its secrecy than from any merit. After the remedy was exposed, the profession was able to give it a fair trial. Many, for a while, were inclined to look upon it with much favor, for the reason especially that it was easily practiced. After a few reported accidents, thoughtful men began the real study of the subject, the *modus operandi* of cure. After a sufficient length of time had elapsed for investigation, I took occasion to record my objections in an article read before the Kentucky Medical Society in 1878. In that paper the position was taken that the injecting of piles with carbolic acid was a dangerous procedure; that by the plan much inflammation was excited; the pain in the majority of cases very great and prolonged; that dangerous hæmorrhage was to be feared; that sloughing was the rule, hence ulceration, stricture, etc., might follow; that death might occur from hæmorrhage, embolism, or septic trouble; and that in no case could a radical cure be pronounced. After an elapse of ten years we find these predictions verified. Dr. Andrews, in his late work on "Diseases of the Rectum," p. 24, says: "The following accidents have been reported to us out of about 3,304 cases: Deaths, 13; embolism of liver, 8; sudden and dangerous prostration, 1; abscess of liver, 1; dangerous hæmorrhage, 10; permanent impotence, 1; stricture, 2; violent pain, 83; carbolic acid poisoning, 1; severe inflammation, 10; sloughing and other accidents, 35." Of course this was an indiscriminate collection and the half was not told. The quacks would not confess their bad results, hence most of this table was from accidents and results so plain that the profession ascertained them. Allingham reports thousands of cases by ligature without an untoward symptom and no death. Others are of the same good report. Kelsey, of New York, who a few years ago was inclined to advocate the injection plan, discountenances it now. Ball, of Dublin, who has just issued an admirable work on diseases of the rectum, only says in mention of it that the plan has been tried in America, but with poor success. The writer begs to say that what was said by him in 1878 he reaffirms in 1888. The remedy came in unawares, has been weighed in scientific scales and been found wanting. No authority to-day advocates its use.

Dilatation.—As has been suggested, after the views of Verneuil were promulgated, it was advised that dilatation of the sphincters be practiced for the cure of all internal piles. Such men as Gosselin, Dubrueil, Durch and others endorsed these views. The plan has been tried extensively in France and, the reports would indicate, with a moderate degree of success. In America it has proven a failure. The theory was wrong, hence the success bad. In the

early formation of piles, I have no doubt but that good could be accomplished by the plan, but after a pile is well formed I am sure it could not be cured by any such procedure.

Excision.—It is a little surprising to hear Allingham say that he regards excision as one of our best operations for internal piles. I think that an author should consider the audience he is addressing; and surely this sentence could result in much harm. To the surgeon accustomed to handling the rectum, the danger might not appear so great, yet to the many that might try this operation it would be fraught with much danger. It certainly can never become a popular method. I have had the internes try it at my hospital clinics, and in each case great difficulty was experienced in controlling hæmorrhage.

The Clamp and Cautery.—This is generally known as Mr. Henry Smith's operation. It finds great favor in the hands of Dr. Kelsey, of New York. It occurs to me that after a surgeon has had a certain amount of success with any given operation in surgery, he is loth to give it up. This certainly must apply to Mr. Smith, who is a great advocate of the clamp and cautery for the cure of internal piles. That this operation, compared to others, is cumbersome, cannot be gainsaid. That it is attended with much danger must be admitted. Any clamp is but a temporary safeguard, and if a break is made in the seared edges of the wound, bleeding must of necessity take place, and we all recognize the great danger of hæmorrhage into the rectum after an operation has been completed. The method has found but little favor in this country, and I am satisfied that, by comparison with the ligature, it will fall into disuse.

The Ligature.—Certainly, of all known methods, the ligature stands preëminent as an operation for internal hæmorrhoids. It has stood the test of years in the hands of the most eminent surgeons. To-day it is the most popular method. Easy of execution, free of danger, and rapid in its results, it can but command the attention of all who are interested in this operation. To the principle involved in the use of the ligature all are agreed, but the method of application is to a certain degree disputed. The method, as practiced by Mr. Allingham, is to dissect the hæmorrhoidal tumor away from its attachments, and then to surround the remainder, at its base, with a tight silk ligature. For the first few years in special practice I did the operation after this plan. I then modified it for the following reasons: 1. It was misleading to teach students after this fashion, because there was much danger in their dividing the artery which supplied the tumor. 2. There was more cutting than is necessary.

The modification consisted in running a delicate knife around the base of the pile, simply going through the integument. This saves any deep

cut and at the same time removes all superfluous skin, or external piles. Indeed, there are many cases of internal hæmorrhoids which require no cutting at all. This point is not sufficiently brought out in the books. I allude to the large internal piles which have no complication as mentioned here, viz.: superfluous flesh, or external piles. These require only to be brought in sight, ligated and returned into the bowel. Much stress is laid upon the degree of tightness that should be accorded the ligature; some saying apply it loosely, others advising it to be drawn tightly. I am sure that the tighter a ligature is drawn the quicker and more effectual will be the cure. A point is made in suggesting the kind of material to be used in the ligature. Many prefer silk. I am in the habit of using the stoutest linen thread, such as is used by saddlers or shoemakers. The twist of the silk, or other material, I am sure has nothing to do with it, as some seem to think it has. The kind of knot to be tied is spoken of, Mr. Allingham remarking that he ties the knot *three* times. Twice is quite sufficient, and the surgical knot has no advantages over the common hard knot. All internal piles existing should be ligated at the same sitting, and all returned into the rectum. The greatest care should be taken in cutting off the tumors after ligating. It is much best to leave the whole mass, rather than to have one ligature slip after returning the tumors into the bowel. The presence of the mass in the gut cannot result in any harm; the ligature is between it and the circulation. As a rule, then, it should not be cut off. A number who have written upon this subject say that the bowels should be confined for from five to seven days, and a light liquid diet enjoined. Certainly this is a mistake, for two reasons: 1. In this length of time the fæces will become hardened and impacted. 2. These patients generally require all the nourishment they can get. When following this advice I have had as much or more trouble result from impaction than from the original operation. My habit is to purge the patient the day of the operation, and to give an aperient on the second day after the operation, and each succeeding day thereafter until the patient is discharged. Consequently a full diet is prescribed if required. When operating under an anæsthetic I always divulse the sphincters, more especially if any cutting is done. This prevents the contracting of the muscles, hence obviates much pain when inflamed.

Anæsthetics.—It is often asked if the operation for internal hæmorrhoids can be done without the use of anæsthetics. If the sphincter must be divulsed because of the complication of fissure, ulceration, or what not; or if any cutting is to be done, then an anæsthetic is absolutely necessary. If internal hæmorrhoids exist without any such complication, and protrude well in response to the

bearing-down effort, then an anæsthetic is *not* necessary. It is often suggested that cocaine could be used with benefit in these operations. In the removal of external piles much benefit is derived from throwing the solution under the growth. In the operation for internal piles I have found it of little value.

Antiseptics.—Unfortunately, strict antiseptics cannot be practiced in these operations. Fortunately, it is not as necessary as when operating elsewhere. I am in the habit, however, in all these operations, of having strict surgical cleanliness as regards both the person and instruments. If any cutting is done the parts are dusted freely with iodoform, and the gauze of the same applied over the wound.

Results.—As the caption of this paper intimates, I have operated about one thousand times for hæmorrhoids by the ligature. I have never had to operate the second time upon the same patient for the affection. Have never had an unnatural contraction around the anus as the result of the operation, nor had ulceration or stricture to result. I have had in this time one case of tetanus, which I believe to have been superinduced by a debauch, the patient having been drunk for several days before the operation. The tumors protruded, strangulated and mortified, hence the operation. He recovered from the tetanus under the bromide treatment. Have had one case of secondary hæmorrhage occurring on the third day. The rectum was plugged and the bleeding stopped. Also one dangerous case of hæmorrhage which occurred one hour after operation was done, in consequence of the slipping of the ligature, the pile having been cut off. The patient was pulseless and cold when seen, but the artery was quickly secured and tied, and he made a good recovery. I have never had a single death result from the operation, and but few untoward symptoms.

INSANITY; SOME POINTS OF MEDICO-LEGAL INTEREST.

Read before the Section on Medical Jurisprudence at the Thirtieth Annual Meeting of the American Medical Association, at Cincinnati, May 9, 1888.

BY PHILIP ZENNER, A.M., M.D.,

OF CINCINNATI, LECTURER ON DISEASES OF THE NERVOUS SYSTEM IN THE MEDICAL COLLEGE OF OHIO.

The present status of Medical Jurisprudence is far from satisfactory, especially the position of the alienist physician in the courts of justice. His testimony often seems to be of little value. His opinion as to the nature of insanity and degrees of responsibility is often not admitted by the court. The medical jurisprudence of insanity will probably never be on an altogether satisfactory basis, until a due knowledge and appropriate feelings on the part of the community, lead to the enactment of proper measures in the

management of all defective classes, of which the insane is but a part.

Discussions of the subject in this organization, though it has no legislative power, may be productive of good because of the influence of a large body of scientific men, especially physicians, in making public sentiment.

The position of an expert on insanity before a jury, is exceedingly unsatisfactory to himself, and reflects but little credit upon him before the community. Conflicting evidence, expert testimony, equally emphatic on opposite sides, or undecided and conflicting on both sides, is the public spectacle usually presented. The radical fault is not that the testimony is naturally *ex parte* testimony, nor that those called upon to testify have frequently no special knowledge of insanity, though these are grave difficulties, but that the expert, however competent, personally has not the opportunity of making such observations as may assure a positive diagnosis. The important truth is not generally appreciated that special attainments are often equally or more necessary in order to know how and what observations to make as to judge from those observations what is the true diagnosis. In obscure cases untrained observers could not be relied upon to find hidden symptoms, more than they would be to point out the diagnostic tests in obscure cases of internal disease. The hypothetical cases put by the advocate are often worse than useless; but the brief personal examination often permitted to the physician may be equally misleading. There is but one satisfactory mode of arriving at a safe diagnosis in criminal cases, where the mental status is very obscure or doubtful. The individual should be held for a length of time, the duration varying according to the necessities of the case, in an asylum or other suitable institution, where he could be under constant and competent observation. But in order that such observations be reliable, the physicians in charge should be men of special attainments, an end that might be gained through their selection by representative medical bodies, rather than through political influence.

Another great difficulty in the medical jurisprudence of insanity, is the question of the proper test of the responsibility of the insane. There is a marked difference in the views of psychiatrists and those of the judiciary, the latter largely reflecting the sentiments of the community at large. The dictum of the court, that the proper test is the ability to distinguish right and wrong, cannot be accepted by experienced psychiatrists. Many of the insane have clear ideas on most subjects, and know full well what the world deems right and wrong, but, nevertheless, because they are dominated by delusions, or under the influence of powerful impulses, or merely on account of their perverted views and

perverted lives, should be judged differently from those of sound mind and dealt with more leniently. This view of the psychiatrist would save the family the odium of crime, but it especially arises from consideration for the insane subject himself. Compassion for human affliction as much as the sense of justice, prompts us to hold an individual irresponsible for his acts. The community at large entertains such feelings toward those who are in such an obtunded or confused mental state as to be practically bereft of intelligence. The psychiatrist, with his more intimate knowledge of insanity and active sympathy arising therefrom, entertains similar feelings towards all those whom mental disease has robbed of the ordinary modes of feeling, thinking, and acting, or who have not, in ordinary parlance, free will. I believe that most psychiatrists would agree that the legal test of responsibility should be the answer to the question, is the subject sane or insane. Such a test would be more readily acceptable if, at the same time that it settled the question of the legal responsibility of the individual, it did not therewith virtually dismiss him from further control, as is practically the case at present. On the contrary, such an insane subject should be completely at the disposal of the court. Matters of discipline, as well as the protection of society demand this. The knowledge of immunity may foster crime among the insane as well as those of a sound mind, while due punishment tends to restrain it. But a special aim must be to protect society from the acts of such irresponsible persons. The ill will with which the community views condoning the acts of the criminal insane, is doubtless partly due to the fear that society may suffer again at the hands of the same individuals, and too often the verdict "insane" virtually sets such people free in society. I could mention an instance of this kind in which I was unfortunately the means of having the prisoner pronounced insane. I say unfortunately, because, from prudential considerations, it would have been much better that the individual should be in the penitentiary than allowed full freedom. Such difficulties could be avoided and proper measures in each case be instituted if, when a verdict of insanity were rendered, the disposal of the case would be left to the discretion of the court. The latter, with the assistance of proper medical counsel, should then order the patient to be retained in an asylum temporarily or permanently, or even inflict degrees of punishment, according to the nature and circumstances of the case.

Questions of insanity in court, indeed, the whole subject of the disposal of the insane, would become a much simpler matter if proper views were held, and proper measures taken, as to the treatment of all defective classes. A large part of the defective class is composed of crim-

inals, at least a large part of the crime class is naturally defective. Their history shows this. It is only in recent years that the mental status of criminals has been made the subject of special study, and more philosophical views entertained as to the nature of crime. In many instances they are found to be possessed of impaired nervous systems and abnormal mental traits. The anatomical investigations of this subject are yet in their infancy. The view that there is a certain type of criminal brain must be looked on as chimerical. But various anatomical defects, or abnormal configurations of the skull have not infrequently been found, conditions which seem to ally such brains with those of degenerative forms of insanity, especially paranoia. Of more value are the clinical studies of the crime class. A valuable contribution to this subject has recently been made by Dr. Robinson,¹ physician to the Eastern State Penitentiary of Pennsylvania. His observations are to the effect that a large percentage of such individuals belongs to families of criminals, in which, at the same time, insanity or other nervous diseases are found, and that the criminals themselves present various abnormalities about the skull, are often the subjects of nervous diseases, and are already, or become, insane. In perpetrating criminal acts, they often are merely acting according to the depraved instincts of their nature rather than from necessity or greed. Such facts indicate the presence of abnormal nervous systems, or that the individuals belong to the defective classes of society. This must be accepted as true not of all, but of a large part of the crime class, and its general recognition is important, because it would tend to create the proper feelings toward this class and lead to their suitable treatment. The insane were formerly believed to be possessed of evil spirits, and subjected to scourging and other brutal treatment. When it became known that they were the subjects of disease, they began to be treated with the care and leniency due to human affliction, with the result of ameliorating their condition and assisting their restoration to health, thereby benefiting society at large, as well as adding incalculably to the well being of the afflicted. Similarly a correct idea of the crime class should lead to changes in their manner of treatment to the benefit of both themselves and society. The satisfaction of revengeful feelings, the idea of punishment, traces of a barbarous age, are still, to a large extent, elements in the treatment of crime. There should be but two considerations in its treatment, the protection of society, and the improvement of the criminal. The more nearly these ends are accomplished the more nearly perfect are the methods of treatment. But the present method of disposal of criminals does not tend to the accomplishment of these ends.

¹ Journal of Nervous and Mental Diseases, vol. xiv, page 281.

The criminal is for a short time secluded, and to that extent society is protected, but this period of seclusion is comparatively short, and when he is again free, he is usually more dangerous to society than before his punishment. His character is hardened. He is morally worse. Therefore, both the criminal and society are injured by his temporary punishment. A special injury from that punishment must not be over-looked. Many crimes are the result of passionate impulse or great temptation, while their perpetrators are not persons of criminal character. There is no reason why such individuals might not again become good citizens, but their future life is ruined, and they may even be driven to crime, on account of their subsequent reception by society. When their period of punishment is over the reputation of the prison clings to them, and deprives them of the common opportunities of making an honest and honorable livelihood.

What remedy can be suggested for the removal of the evil effects of the present treatment of crime? The method of treatment I have to propose, while it can only be vaguely outlined, points out, in my opinion, the direction in which changes should be made. First, I believe the guiding principle in treatment should be this, that punishment must be adjusted, not to the crime, but to the criminal, to the character of the individual, rather than to his deeds. As far as possible criminals should be divided into two classes. The first comprises those in whom the criminal act is an outgrowth, not of character, but of circumstances, the result of great temptations, blinding passion, etc. If such a distinction was clearly made, the members of this class would probably be received with such a degree of trust by society that their future need not be altogether wrecked. Probably they would carry with them only the reputation attached to their acts, and not an additional prison taint. As this class has no constitutional tendency to vice, there would not be the danger of their breeding the criminal class, nor any special future danger from themselves.

The second class includes those of criminal character. They are, and always will be, a danger to society. In addition to this, as they breed their own kind they are constantly adding to the crime class. From these ills, the danger from the criminals themselves, and the multiplication of the crime class, society should be, as far as possible, protected. Such criminals should be permanently secluded, but inasmuch as they belong to the naturally defective classes, and therefore are deserving of commiseration, their seclusion should be the least possibly painful, consistent with our great aims, protection of society, diminution of the crime class, and their own support. The best means to accomplish these ends must be learned from experience,

especially from the wise observations of those conversant with penology. That many difficulties must arise in their application, the oft times difficulty of distinguishing the class to which the criminal belongs, the fact that the two classes merge into one another, and that a large number of criminals cannot be properly arrayed with either of them, need not in any way affect the great principles involved, or interfere with their practical application. Many adjustments would be necessary which would naturally grow out of experience.

A CASE OF NECROSIS OF THE MASTOID CELLS AND THE ENTIRE LABYRINTH OF THE OTHER SIDE, WITH PARALYSIS OF THE FACIAL NERVE,

FOLLOWED BY PARTIAL RECOVERY OF HEARING.

Read at the Congress of Otolology, Brussels, September 10, 1888.

BY LAURENCE TURNBULL, M.D., PH.G.,
AUROLOGICAL SURGEON TO THE JEFFERSON MEDICAL COLLEGE HOSPITAL,
PHILADELPHIA, PENN.

In most of the cases of purulent disease of the ear extending from the middle ear to the brain, the upper bony wall (roof) of the tympanic cavity is the part usually affected, and by this route the disease is carried direct to the cerebrum or cerebellum; transmission may also occur through the blood-vessels and other sources. Another and more rare method of tissue conveyance of ear disease to the brain, is by way of the labyrinth through the inner wall of the tympanum and round window. The base of the stapes again, with its delicate ligaments, forms the only septum between the tympanum and vestibule, and when suppuration takes place in the labyrinth, the disease advances through the cribriform floor of the internal auditory meatus to the auditory nerve, and thence to the base of the brain and medulla oblongata. In other cases, purulent matter is formed beneath the arachnoid, over the whole surface of the brain, or an abscess may develop between the arachnoid, the pia mater, or by pressure in the brain substance. In some rare cases the disease extends a considerable distance down the medulla spinalis.

When destruction of the bone has extended in the direction of the posterior cranial fossa, abscesses form in the cerebellum.

In the case we are about to relate the whole labyrinth became necrosed.

Mary T., æt. 9 years, a girl with dark eyes and hair, of delicate constitution, was admitted for otorrhœa as an outdoor patient of the Jefferson Medical College Hospital, July, 1882. The disease succeeded a severe attack of scarlet fever in the early part of the year. After recovery fistulous openings showed themselves over the upper part of the mastoid cells of the right side. These

openings were enlarged and a mass of dead bone removed under antiseptic treatment.¹

The opening healed under careful treatment, nourishing diet, and alteratives of bark and iodide of iron. She absented herself without consultation, and nothing was heard of her until December, 1886, when she returned with a profuse left-sided otorrhœa, facial paralysis, and deafness. From the mother's account she had suffered from an attack of diphtheria, with inflammation of the middle ear with extension, evidently, into the labyrinth, also involving the facial nerve (within the Fallopian canal), with loss of sight, hearing and locomotion. This attack terminated, not in death, as is the usual result, but in an extensive abscess involving the middle ear and side of the face, accompanied with profuse bloody discharges, the lumen of the auditory canal being filled with a mass of polypoid granulations. The girl was admitted into the hospital, and the following operation performed.

She was etherized, and by means of Wilde's modified snare the entire polypoid mass was removed. This was followed by a profuse discharge of dark venous blood, which was checked by syringing with ice-water, and then the meatus was packed with tannic acid, camphor and iodoform. After this operation she was kept in bed for a few days until she recovered from its effects.

On December 3 she was again put under the influence of ether, and on introducing a probe it was found that the external auditory (bony) meatus and temporal bone of the left ear were necrosed; there was also ulceration and sloughing of the whole cartilaginous canal. A strong pair of bone forceps were carefully introduced, and considerable force employed so as to bring the diseased portion of bone to the surface; but it was not considered safe to remove it at that time. It was so large it was feared it would lacerate and injure the parts.

She was again taken to the ward, after stopping the flow of blood with antiseptic cotton. The resident physician of the hospital was directed to keep the parts well packed, using powdered boric acid with absorbent cotton; and for the removal of any offensive odor to use a solution of permanganate of potassium. After ten days of this treatment, the dead bone became so loose that it was removed through the enlarged meatus without pain or any symptoms of cerebral disturbance.

The patient was kept in the ward for six weeks, until all discharge had ceased. She was then placed upon large doses of iodide of potassium and tonics, strychnia, etc., with the use of the galvanic battery for the facial paralysis. She became well and strong, able to talk more plainly, and to use her feet and limbs. She could hear loud conversation in the right ear, but there was no improvement in the facial paralysis, nor diminution of the deafness in the left ear.

After her discharge, the mother was given a card to Dr. G. Betton Massey, a distinguished electro-therapeutist, who treated her for some time, but without much benefit, for the paralysis. Time has restored in part the connection of the nerve. Such cases as this have been reported by Dr. Friedrich Bezold² and others.

Description of the Specimen.—From the density of structure, weight, and shape of the portion of bone removed, we felt convinced that it was almost the whole of the petrous portion of the temporal bone. This opinion was confirmed by a more careful examination and section by Dr. Morris Longstreth, pathologist to the hospital. The following is his report:

Report on Sequestrum from the Ear.—The sequestrum, embracing the whole labyrinth and Fallopian canal, measures in its long axis nearly an inch ($\frac{1}{8}$ inch), and its transverse measurement on section surface is slightly over half an inch ($\frac{1}{2}$ inch). It weighs 36 grs. Its surface is rough, jagged, and eroded by the necrotic process, except at one portion posterior to the internal meatus, which appears dense, white and smooth, like the inner skull surface covered by the dura mater; on this part is a shallow furrow like those provided for the folds of this membrane, or for a blood-vessel or sinus. The opposite surface shows above the "fenestra ovalis" and below it the "fenestra rotunda," the latter opening broken and irregular.

The fragment of bone is penetrated by several foramina—one large one towards the tapering end, and two smaller ones near the same end, but on the opposite aspect; these two are the entrance and exit of a canal (referred to before) through the bone tissue. A section through the long axis of the fragment, which on the cut surface shows itself to be very dense, reveals a half dozen cells, excavations which intercommunicate and are connected with the external foramina already spoken of.

In the interior was found the vestibule with its fossæ, the cochlea, modiolus and lamina spiralis, with the semicircular canals broken off near their junction with the vestibule.

May 5, 1888. The present condition of the patient is as follows: She is in perfect health, well and strong, being able to hear a twenty inch watch one inch on the right side, the right being the ear from which the portion of necrosed mastoid was removed.

There has been no discharge from either ear since the removal of the diseased bone. The C-3 tuning-fork was heard (felt) in the air in front of both ears, but as a musical sound heard only in the right ear. Her articulation is at times more or less imperfect, but she is able to talk, and repeat the German alphabet and give all the letters their proper sound. She attends a German school

¹ See author's "Clinical Manual of Diseases of the Ear," p. 361, 1887.

² "Necrosis of the Labyrinth and Paralysis of the Facial Nerve." Archives of Otology, vol. xvi, No. 4.

with hearing children. The facial paralysis remains the same. The experiment of Valsalva is felt in both ears.

The meatus from which the sequestrum of the left labyrinth was removed is twice the size of the normal, and cicatricial tissue is seen on its sides. In the other there is a small narrow meatus with a cicatricial pseudo-membrana tympani.

This is a remarkable case, in that, after the most severe symptoms involving the brain, accompanied with paralysis of the face, arms, limbs, and total deafness on one side, and such a copious discharge from the ears, there should be recovery to such an extent that the patient has no otorrhœa, is able to hear and converse, and so take her place at home without having to be sent to an asylum.

The specimens, photograph and cuts were presented to members of the Section for inspection.

M. HARTMAN, of Berlin, has treated a case of necrosis, with exfoliation of the labyrinth, and although the tuning-fork was heard on that side, the patient was deaf to the sound of the voice.

M. POLITZER gave an analogous case, that of M. Burkhardt-Merian at the Congress of Bâle, which seemed to indicate that the sound could be directly perceived by the acoustic nerve.

DR. BARR, of Glasgow, showed the sequestration of the osseous labyrinth of a child ten years of age, attacked after several years of otorrhœa, following scarlatina. The patient had a facial paralysis, but was not affected with dizziness, although the semicircular canals were eliminated.

M. GELÉE: I ask my confrères if they think anyone can hear without ears, or if it would not be better to suppose that these eliminated sequestrations did not comprise the entire ear. For my part I prefer to believe that there is yet a portion of the labyrinth which perceives the sound of the tuning-fork rather than to suppose that the facts exist contrary to physiology.

THE THERAPEUTIC ACTION OF SOME OF THE MINERAL WATERS OF THE UNITED STATES UPON MA- LARIAL DISEASES;

WITH RULES FOR THEIR USE.

Read before the American Climatological Association at the Congress of American Physicians and Surgeons, Sept. 19, 1888.

BY W. C. VAN BIBBER, M.D.,

OF BALTIMORE, MD.

The effect of bad air upon the human system is shown in various ways, the differences depending upon the particular kind of air which causes the diseased conditions. Salubrious situations on the earth are known and recognized mainly from certain characteristics of the human inhabitants. It is true that other air breathing animals are in-

juriously affected by bad air, but this comparative study is not within the scope of the present paper.

Many of the changes in health, and grades in constitution produced by climate upon man are well known, and those peculiarities of disease existing in the inhabitants of different atmospheric planes have not escaped observation. The practicing physician and climatologist will do well to study the effects of hills and mountains upon the human organism, for they exercise influences not to be accounted for by the chemical analysis of the air. By far the greatest number, as well as the most serious diseases, produced by the quality of the air alone, are found to originate in the lower strata of the air, that is, at an elevation but little above the level of the sea. It is true most of the inhabitants of the earth live in these lower strata, because most of the great cities of the world are built upon navigable waters, and the most fertile lands are found in alluvial formations.

It is believed that the plane of the atmosphere three hundred and fifty feet above tide water is for the most part free from that mysterious something which produces ague and fever. A few noteworthy exceptions may be found to this law, but the planes of the atmosphere, from the tide level, to a height of ten thousand feet, have already been studied as to the production of certain diseases, and to the curing of others, and the work is still going on. This is one of the chief problems of the science of Climatology; and one result of these observations shows that certain symptoms and individual appearances, accompanied by constant pathological changes, are found with us, only as a rule, upon the ocean slopes and large river bottoms, and seem to be identified with this particular atmospheric plane.

To state the matter more precisely, we may say that, if a thousand men should be selected and taken from our sea-board swamps and river bottoms, below the thirtieth parallel of latitude, and placed side by side with a thousand men selected from a plane of the atmosphere over three hundred and fifty feet above tide water, north of the 30th parallel of latitude, the one set of men, can be distinguished from the other set, by the practicing physician, both whilst the men are living, as well as by an examination of the organs of the cadavers. Again, it is believed, that, should the men from the hills and those from the swamps change abodes for a few years, corresponding changes would take place in their physical peculiarities and outward appearance. These peculiar individual changes are wrought in a gradual manner by time, and, until recently, it seemed to be by an undetected hand; yet the changes are none the less certain and well marked.

It is the changes which will take place in the thousand men transferred from the hills to the swamps which will now engage our attention.

These changes steal along in the human system, for a time possibly without noticeable manifestation; until finally, a culmination takes place, and a chill, a fever and a sweat ensue in their proper courses. Then what was latent before soon becomes active, and the marked individual appearances begin to manifest themselves. These are externally, a sallow and stretched skin, muddy colored conjunctivæ, dry hair, dry and brittle nails, emaciation, a stooped curved and shrunken figure, and a slow crumbling of the teeth. The peculiar sensations or feelings which accompany these external appearances, are a gradual loss of strength and vigor, a desire to recline and rest, torpor of mind as well as of body. As mental effects we notice loss of ambition, indecision, procrastination, superstition, a craving for stimulants, with a continuous belief in "biliousness." These symptoms come on slowly and may continue for years without relief, because they seldom, or never, of themselves produce death, though their effects are serious and far-reaching; and, as will be seen hereafter, the three largest and most important organs of the body are so altered in texture and function, that there is, comparatively speaking, but little of the physiological man left. It is no wonder therefore that there should exist under these circumstances a predisposition to pneumonia or other fatal affections. So that, when from some intercurrent disease or from accident, death does ensue, the liver is found enlarged, generally softened, but sometimes indurated, and always changed in color, being filled with a black substance called "pigment." The spleen is likewise enlarged, softened and changed in color. The marrow of the bones is also altered in color and consistence; and a peculiar crescent shaped micro-organism has been found in, and around the red blood corpuscles, which is thus described, in a letter to me by Surgeon George H. Sternberg, U. S. A. He says:

"In response to your questions I would say that the parasite discovered by Laveran in the blood of malarial fever patients presents itself in various forms. Some in the interior of the red corpuscles, amœboid and segmenting forms, and some free in the serum, crescentic and flagellate forms. That these forms represent different stages in the life-history of the same micro-organism is inferred from the fact that pigment granules are found in all of them, and also from their association in the blood of malarial fever patients and from the fact that they have not been observed under other circumstances.

These facts also give strong support to the view, that the parasite in question bears an etiological relation to malarial manifestations. The rapid destruction of red corpuscles during a malarial paroxysm, and the accumulation of dark pigment granules derived from the blood especially in the liver and spleen as the result of re-

peated attacks, is quite in accord with the observations of Laveran, Richard, Marchiafava Celli, Golgi, Councilman, Osler, and others relating to this interesting hæmatozoon."

The disease now under consideration, was anciently called malaria because it was universally believed to be due to unwholesome air. At present there is a question whether it comes into the system from the air, or through the water, in those situations where it is found; but there can be no question as to the identity of the affection; and this is the disease which will be considered in this paper.

It is surely a high office for the physician to study additional means of relief for those piteous sufferers from this terrible malady, and no more useful aim can engage the attention of this Society than to unite, in its collected wisdom, during this discussion, in an endeavor to ameliorate such suffering as is familiar to you all. The most important advance in this direction, was the introduction into Europe of the cinchona bark about the middle of the seventeenth century, and its properties as a febrifuge were soon widely recognized. Numerous theories have been advanced as to the mode of operation of this remarkable remedy, and still the problem remains unsolved; perhaps only to find a solution when we shall thoroughly understand the diseased conditions for the relief of which it is employed. The three things which we may take as definitely settled, are that the "Jesuits' powder" is beneficial in these fevers, that it does not always cure them; and that we neither know why it succeeds nor why it fails. The immense number now suffering from both the acute and chronic forms of this kind of malaria, notwithstanding the most liberal use of the specific remedy, is sufficient to prove conclusively that it has not an absolutely curative effect by itself.

The purpose of this paper is to suggest certain supplementary or auxiliary remedial agents in the treatment of these diseases; and these are found among the mineral waters of the United States. For more than eighty years the waters of the Greenbrier White Sulphur Springs, in Greenbrier County, Virginia, have had a high reputation for the cure of malarial diseases. The situation of the spring is in a beautiful mountain valley, twelve hundred feet above tide level. The medicinal virtue of the water is supposed to reside both in its solid and gaseous contents. Bad cases of the kind of malaria which has been described, are to be found visiting this spring every summer for the benefit of its water; and a large proportion of these patients come from the cotton and rice plantations of the sea-board; some from the valley of the Mississippi river and its tributaries; and others from the valleys of the rivers which empty into the Gulf of Mexico. I first visited this spring as a physician in 1851.

Since that time I have had opportunities to study and observe the effect of this water upon the kind of malaria which has been described; and my observations have led me to adopt a regular system for its use.

The plans of cure which I shall recommend have been tested upon many patients and with generally good results. It often happens that those wishing to be benefited cannot remain at the spring longer than from two to four weeks; and to suit this necessity, the plans have been called the two and the four weeks plans.

That for two weeks consists in drinking as much of the water, early in the morning, as is necessary to sensibly affect both the bowels and the kidneys—enough to give one or two loose watery movements from the bowels, and a free discharge from the kidneys. For this purpose an average person will require from two to four glasses of the water early in the morning. These should be taken whilst the patient is in active exercise in the open air, and two hours should elapse after drinking the last glass of water before taking breakfast. At noon take a warm bath of the sulphur water, temperature 94° to 98° F. and remain in the bath from fifteen to twenty minutes. Whilst in the bath drink two or three glasses of the sulphur water. The time of the bath should be arranged so as to have dinner or lunch soon after leaving it; say about two o'clock, which is the usual dinner hour at the hotel. After this drink two glasses of the water at five o'clock P.M.; and two before retiring at night. Wash in the sulphur water morning and night; and exercise freely during the day by walking in the mountains. This two weeks systematic course has such a decided alterative action that few persons can safely carry it further than the time specified.

In the four weeks course the bath is ordered every *other* day, and the amount of the water to be taken may be proportionately moderated. The four weeks course should always be preferred when time can be given for this purpose. The object of this treatment is to produce a continuous acceleration in the action of both bowels and kidneys, and to increase the activity of the skin. These three objects are undoubtedly accomplished, and during the active course of treatment a good indication of its future success is found in the increased vigor and improved appetite; elevation of spirits, with a feeling of lightness of the body, and buoyancy of the mind, which are most agreeable. One of the peculiarities of this water when drunk pure from the fountain, is to elevate the spirits with a sensation not unlike that produced by champagne. It causes a slight feeling of dizziness and an excitement of the brain. It may be this which gives a charm to the place, and a lustre to the ball-room which is not seen elsewhere. But it should always be used with refer-

ence to individual idiosyncrasies, either pure from the fountain, or "staled" by the evaporation of its gas according to the valuable rules given by Dr. J. J. Mooreman, who was for more than thirty-five years the resident physician there.

The other springs, with the waters of which I have had nearly as long an experience in chronic malarial troubles, are the Saratoga Springs, in Saratoga County, New York. There are now more than twenty-one springs opened at this famous place, each one of which has a different chemical analysis. My observations have been more particularly confined to the Congress, the Hathorn, the Hambleton and Washington Springs as drinking waters, and to the Putnam, the White Sulphur, and the Red Springs as bathing and washing waters. From these I have made up a definite course of treatment, which I advise for two weeks and four weeks, similar to the courses already given for the Greenbriar White Sulphur water, and which, I think, has many advantages.

During the first week of the two weeks course, as much of the water of the Congress Spring should be taken, early in the morning, combined with active exercise, as will produce a decided effect upon the bowels and kidneys. An average person will require from two to four glasses of this water, and the last glass should be taken about an hour and a half before taking breakfast. During the second week of this course the Hathorn Spring should be used. Take each day at noon a bath of the Putnam or White Sulphur water, at a temperature of 94° to 98°F., and remain in the bath from fifteen to twenty minutes, drinking whilst in the bath, one or two pints of the Hambleton Spring water. At 5 P.M. take a wineglassful of the Washington Spring water, not more; and at 6 and 10 P.M. take one or two glasses from the Congress or Hathorn Springs. Wash night and morning in the water of the Red Spring.

This gives a definite course of treatment, the object of which is to produce an alterative effect, and to rapidly change the molecular structure of the body. Few individuals can continue such a course of these waters for a longer period than two weeks. In the four weeks course, which is always to be preferred if it is possible, the bath is to be taken every other day and the amount of the waters taken each day to be proportionately diminished.

In this course of treatment, by the water of either of these springs, the activities of the body are increased in every department, the bowels, kidneys, skin, liver, stomach, mind and spirits are all safely and agreeably stimulated. It is a full occupation of his time for a patient to undergo this treatment. To most persons it is a delight to experience the sensations resulting from it. The entire body seems to be renewed, the patient feels confident that the change will be last-

ing. It is a safe treatment; it is systematized and may be changed to suit individual cases. If this system is carried out it may be of service in preventing that blind bathing and drinking which our physicians find so injurious at all the springs in this country and which is in strong contrast with the practice at similar health resorts in Europe.

Having pointed out two springs which are salutary in malarial troubles, and having given those rules for the use of their waters which I have found most beneficial, I might here let the subject rest; but the disease of which we are treating is such a remarkable one, its literature is so large, its prevalence so widespread, its theories so interesting, that I trust I may be permitted, in closing, to say a few words concerning the *modus operandi*, or the manner by which the beneficial effects of the proposed system are produced.

Until about eight years ago everything concerning the cause of intermittent or remittent fever was obscure, and everything concerning the manner of its cure was a matter of theory and conjecture. Now a step has been taken in advance which will increase the interest attached to its treatment. Students in Europe; at the Johns Hopkins University; in Philadelphia, and elsewhere in this country, have made public the results of study and experiment, which bring the whole subject into a new phase; replace fancies by facts, and introduce a new method of treatment. To bring this out clearly, I will place side by side the two explanations of the manner of cure, in order to contrast the old teaching with the new:

The old explanation.—"By the use of the waters as advised, all the outlets of the body have been opened, and in this way the diseased particles have been removed. What particular path they took to get out of the system is a matter of conjecture; but the result of the treatment is sufficient to prove the fact that they were eliminated by some means or other."

The new demonstration would read in this way:—"The hæmatozoon which controls the disease has been found, and a study of its movements will alone reveal the truth. The number of red blood-corpuscles which have been damaged in any particular case can be told by actual count; and the restoration of healthy red blood-corpuscles can be determined in the same way. Under certain favorable circumstances the healthy red blood-corpuscles are rapidly formed, and when they are sufficiently abundant and vigorous, they dominate the system, resisting both the reception and encroachments of the disease. Those globules that were formed at the two springs, both of which are situated at elevations above the usual melanæmic line, were produced under different and favorable circumstances of air, food and water. If, during a certain system of treatment, the blood

be rapidly brought from a condition of disease to one of comparative health, we may legitimately infer that those globules which have been formed in the progress of the treatment, are of a healthy character; and if we were able before, to detect special vitiation in the red corpuscles, we may expect to find special improvement in these. And this is precisely the result which follows the treatment I am recommending."

Without entering into technical detail, I think what has been said represents the present state of our knowledge concerning paludal malaria. The plans which have been advised for its adjuvant treatment, I can recommend to you after an ample experience, and if they should be sanctioned by your reason and used in your practice, I cannot doubt that the benefits will at least be equal to what I have mentioned as the result of my own experience.

MEDICAL PROGRESS.

EFFECT OF LANOLIN ON MICRO-ORGANISMS.—The results of GOTTSTEIN'S experiments on this subject are thus given in the *Deutsche Med. Zeitung*, Berlin: 1. The bacteria which effect a spontaneous decomposition of glycerine fats belong presumably to the class of anaërobes; a number of aërobe germs (even the putrefactive) perish on a medium containing fat. But the term of continuance of this retrogressive metamorphosis is decided by the proportion of fat to the other ingredients of the nutritive medium. 2. Free fat contains anaërobes for some days after it is exposed; but lanolin has under similar circumstances neither aërobe nor anaërobe germs. 3. Glycerine fats may be so impregnated with bacteria that the latter can pass through the fat to the lower-lying infectible substances, while lanolin cannot be permeated by bacteria. It acts, therefore, as a preventive of decomposition when laid over infectible substances.—*British Medical Journal*, Nov. 10, 1888.

A DIAGNOSTIC SIGN OF NEPHRITIS.—GEISLER says that the elimination of iodide of potassium by the kidneys may be used as a diagnostic sign of nephritis. While the quantity of albumin increases with the accentuation of the lesions of the glomeruli of the kidneys, the rapidity of elimination of iodide of potassium remains normal. But it is diminished as the lesion of the canaliculi of the kidneys becomes more advanced. This is true in both the chronic and acute forms of nephritis.—*Pract.*, No. 27, 1888.

TARTRATE OF THALLIN INJECTIONS are recommended for gonorrhœa, in 1:50 and 1:100 naphthol solutions. Use three injections of one-half or one-third a syringe-ful daily.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, DECEMBER 1, 1888.

THE NUMBER AND VARIETY OF MEDICAL SOCIETIES.

In *THE JOURNAL* for November 24, 1888, we made some suggestions in answer to the question, whether the formation and support of so many American associations of medical specialists was not tending to the disintegration and final destruction of the American Medical Association as the great representative organization of the profession in this country? While we then freely expressed our conviction that no fears need be entertained of such a result in the future, and candidly admitted that such National specialist organizations were affording a useful field for some members of the profession to work in, who would not work in any other, another and perhaps more important question demands more attention than it has yet received. Are there any evils arising, or likely to arise, from the organization of an unlimited number and variety of medical societies, each acting independently of all the others?

If, as is the fact, we have in each of the larger cities from six to ten independent medical societies, and in each State not only one general State medical society but several State societies of specialists, and then several societies receiving members from parts of several States, does it not almost necessarily tend to so far divide the time and work of the working members of the profession as to impair the efficiency and influence of the whole? No member of the profession engaged in active practice, can well afford to attend and

sustain properly more than one local medical society meeting weekly or semi-monthly; one State society meeting annually or semi-annually; and one National society meeting annually in different parts of the country.

If he divides his time with a larger number of societies, he lessens the amount that he can give any one; or if he tries to contribute something to a larger number he either presents the results of his work so hastily and imperfectly prepared as to be of little value, or he reads substantially the same paper to three or four different medical societies as an original contribution to each. One of the most important defects in the contributions to medical societies in this country is, incompleteness, arising from insufficient time and attention given to their preparations. But those who advocate the organization of as many independent medical societies, local, State, and National, as there are special departments of the science and art of medicine, evidently overlook one of the fundamental and important objects to be gained by professional society organizations. This object is, to bring those representing all classes and interests in the profession *together* at stated intervals, that by personal acquaintance, friendly intercourse, and mutual interchange of knowledge, personal and sectional prejudices should be removed, the common-stock of professional knowledge and skill increased and more widely diffused, and the unity and power of the profession as a whole greatly strengthened. Instead of fostering this fundamental object, the organization of an independent society, local, State and National, for every *specialty* in medicine, only tends to keep the cultivators of each isolated from the others; or if any attempt is made to obviate this by bringing representatives of all these together once in three or five years, it still leaves the great body of educated and faithful general practitioners out of recognition, and directly makes the line of distinction between the specialist and practitioner more plain, and more rapidly develops into full maturity the class distinctions of specialists, consultants and general practitioners with their inevitable jealousies and bickerings.

On the other hand, with one general medical society in each city, county and State, with one National society constituted of representatives from all these, and in each of which the practitioners of every department of the healing art

can meet on a common platform; and yet within the regulations of each, Sections sufficient to accommodate the more detailed work of every legitimate specialty; we would have the most complete professional organization possible; combining all the inspiration, homogeneity and power derived from unity, with every advantage for detailed scientific work in the several Sections, that could be afforded by any number of separate specialist organizations. We wish every intelligent, earnest worker in our profession would give more thought to this subject. If in "union and harmony there is strength," it logically follows that in segregation and discord there is weakness.

RHEUMATISMAL METATARSAL OSTEO-PERIOSTITIS.

The apparently unrecognized, or but little recognized disease of infantrymen, is written of in an interesting article in the *Revue Générale de Clinique et de Thérapeutique*, of October 25, by CH. ELOY. It may be considered as an œdema localized at the head of the two or three metatarsal bones of the centre of the foot, with an accompanying osteo-periostitis. The cases on record number 20, 8 having been reported by Pauzat in 1887, 11 by Poulet 1888, and one by Eloy. Of the 19 cases of Pauzat and Poulet, 2 were old soldiers. In all of the cases the symptoms came on after marching. In all the cases there were two cardinal symptoms: painful œdema and periostitis. The œdema was first manifested, after one or more long marches, by a swelling limited to the level of the dorsal face of the two or three intermediate metatarsals, and sometimes invaded the root of the toes or effaced the tendinous projection of the extensors. It is of medium hardness, depressible under the finger, and accompanied by slight elevation of the temperature. The pain accompanying it is not spontaneous, but is provoked by pressure and by movements. There is a very manifest arthralgia of the metatarso-phalangeal joints when a toe is seized with a pair of forceps and repeatedly flexed. The localized œdema and the pain are the signs of the beginning of the affection, and characterize the first period. After some time periostosis begins. The finger, and sometimes the eye, of the observer can detect swelling of the metatarsals. This periostosis may appear as early as the fourth day, but usually

not until the twelfth or fifteenth day. Whether it comes on early or late, the periostosis persists for several weeks, or even months after the disappearance of the œdema, the diminution of the pain, and the return of the tendinous prominences to their normal form. These phenomena characterize the second period—the osteoplastic phase.

There are two views as to the pathogenesis of this affection. On the one hand it is claimed that it is a traumatic periostitis; on the other, it is thought to be an osteo-periostitis of rheumatismal origin, and consequently the local manifestation of a specific affection. Pauzat excludes all constitutional influence. His patients were young men, 21 or 22 years old, robust, vigorous, with well-formed feet, but unfitted by previous occupation for long marches. Fatigue, then, seems to be a predisposing cause. Seven of the eight cases reported by Pauzat were those of soldiers recently enlisted. But it is a curious fact that the affection was never bilateral; one foot only was affected, and one as often as the other. Is it not possible, however, that men that have not learned the whole art of walking perfectly, use one foot more than the other—put more strain on one foot. Some football players, for example, can kick with only one foot, while others use each foot with equal facility. Can the shoes be responsible for the affection? In view of the small number of soldiers affected this does not seem probable; but it would be interesting to have some statistics from the Spanish army, in which, we believe, the soldiers use sandals on the march.

The prognosis of the affection is serious, according to Pauzat; good, according to Poulet. Pauzat's unfavorable opinion is based on the fact that the osteo-periostitis places the patient out of actual service for a considerable time. Poulet bases his prognosis on the fact that the malady does not prevent the patient from entering the service again.

The treatment of the affection, according to Eloy, consists in rest, elevation and immobilization of the foot, and topical applications and compression. Topical revulsives, such as the iodides, should be used in the osteoplastic stage of the disease.

"CHRESINE," the most recent American product, is said to be a product of skim milk, alkali, and hog fats.

OUTBREAKS OF MALIGNANT DIPHTHERIA.

Since November 1st outbreaks of malignant diphtheria have been reported from Brainerd, Minn., Moline, Ill., New Orleans, Wabash, Ind., Galesburg, Ill., Coxsackie, N. Y., Waterloo, Iowa, Oxford Junction, Iowa, and several other places. During the month of October, at Moline, Ill., there were 69 cases and 12 deaths, and during the first 17 days of November 41 cases, with a smaller death-rate. In New Orleans diphtheria has been more than usually prevalent during the past few months. The extent to which it has prevailed in New Orleans of late months is something of a novelty for that city. The statistics of the Board of Health show that the number of cases of diphtheria has been on the increase for several years past, and this year the virulence of the disease has redoubled. This fact, taken in conjunction with the almost total immunity from this trouble enjoyed in the past by this city, proves the existence in New Orleans of conditions and unsanitary influences that did not previously prevail.

In New Orleans the disease is not particularly virulent in localities, but is scattered all over the city with the exception of the Carrollton district, where no cases have occurred. It has attacked indiscriminately white and black, and has visited as well the homes of the rich as the abodes of poverty. The system of isolating the sick by flagging the dwellings in which diphtheria exists has proved effective, as the number of cases is steadily diminishing, so that there is every prospect that the disease will soon be stamped out. During the first 16 days in August there were 69 cases, during a like period in September 77 cases, in October 58 cases, and during the same number of days in the present month but 44 cases were reported. Whilst fighting the disease, the Board of Health has watched every detail that might throw light on the causes producing it. All infected premises have been thoroughly examined as to local and surrounding sanitary conditions, and all information has been carefully tabulated. The Board of Health officials complain of the utter indifference shown by citizens generally to sanitary measures. This accusation, whilst probably just, is one that can be brought against the citizens of many other communities than New Orleans.

In Wabash, Ind., more than a dozen deaths had occurred up to Nov. 18. Dispatches from Wabash

state that "the malady was at first thought by local physicians to be membranous croup, and was so treated, but at a council held it was decided that it is diphtheria. The scourge is confined to children whose ages range from 1 to 10 years. Every case has so far resisted treatment and proven fatal, the patient dying within two or three days. The symptoms are all similar to those seen in croup of the most malignant form."

At Oxford Junction the epidemic is now subdued, but while it lasted there were 190 cases and 42 deaths. At Waterloo, Iowa, the town officials issued a "quarantine" proclamation, closing indefinitely all schools, churches and Sunday schools, and ordering that all persons dying of the disease be buried within twenty-four hours.

At Coxsackie, N. Y., diphtheria was spread in the following manner: The body of a child, aged 9 years, who died of diphtheria at Guilderland, was brought to that village in an open wagon Nov. 10, not disinfected, and buried there. The coffin was opened at the grave and viewed by the members of the family. Since then of those who viewed the body, an aunt died on the 12th, a brother aged 4, on the 14th. The State Board notified the Health Officer that he must quarantine any persons affected with the disease.

A dispatch of November 19 says: "Diphtheria is still raging in Galesburg, Ill. Many deaths are reported and many new cases are daily coming to light. The health officers are making a thorough investigation as to its causes, and have just come to the conclusion that the water in the school building had something to do with it, and consequently have ordered it shut off."

Diphtheria made its appearance in Vermillion County, Ill., about Nov. 14, and soon broke out in the village of Rossville. Cases exist in many families. The public schools were all closed on Nov. 23. No religious services will be held in any church for several Sundays, and no public meetings of any kind will be allowed in the village for four weeks. Business is retarded, and the citizens are greatly alarmed over the malignancy of the disease, but hope by strict measures to prevent its further spread.

Diphtheria is properly classed among the preventable diseases. In spite of this, and of the many and repeated outbreaks of the disease, two of the most difficult things known to sanitarians are to get the people interested in sanitary meas-

ures to an extent sufficient to assist health officers, and to get the newspapers to print really valuable sanitary information. It seems to be a singular trait of the human mind that makes people so blind to their own best interests. Civilized man can be touched most easily through his pocketbook, and sanitary workers should lose no opportunity of showing the people what a good investment, from a financial point of view, health service is.

EDITORIAL NOTES.

DISEASE-RIDDEN INDIANS.—Indian Agent Jones, of the Berthold Agency, has made application to the Department for a physician who shall remain constantly at the Agency. This request is the result of hurried examination of the health of the Indians. Mr. Jones was recently appointed. He finds that disease runs rampant among the entire Indian community. The Indians at this Agency are in a most deplorable condition. In the past their health has been neglected, they have been permitted to roam about the country and, as a result, some members of the tribe have returned to their camps laden with disease, which has spread to nearly every Indian at the Agency. It is understood that the request for a physician has been granted, and that steps will be taken to prevent the further spread of disease among the tribes. The condition of affairs at the Agency in the past has not only ruined the health of the Indians, but has been a constant menace to the whites with whom the Indians necessarily associated. So great became this danger that the county and city authorities were alarmed, and the Mayor of Bismarck was compelled to serve notice on the former Agent that if he did not keep his Indians on the reservation an investigation of the matter would be demanded. Agent Jones hopes to be able to check the disease and promises to keep the Indians on the reservation.

CHOLERA AND CROWDED ROOMS.—DR. DELOS RIOS gives as the result of his prolonged investigations of the subject the following remarkable statistics bearing upon the mortality of cholera, in relation to the number of persons occupying one room when attacked by it: Of 10,000 persons attacked by cholera, and living one person in a room, 68 died; of 10,000 attacked, where there

were one or two persons to a room, 131 died; of 10,000 persons who were attacked, living two to four to the room, 219 died; finally, of 10,000 persons attacked, living four or more to the room, 327 died. No data appear as to the varying size of the rooms, which must, of course, have constituted an important factor in their hygienic character—as must also have been their location in the upper or lower stories, etc.

THE INFANT HOSPITAL AT VIRGINIA BEACH.—This institution, the benefits of which cannot be doubted, appeals to the hearts of all parents, and the noble efforts of those who have had the matter in charge should be encouraged by such liberal contributions as will enable them to continue it and greatly extend the field of usefulness of the sanitarium. The last report shows that the hospital has done good work during the past summer. Mothers are allowed to accompany their children to the hospital, and thus the managers are relieved of much responsibility, and the mothers are materially benefited, not only in health, but in learning the necessity of careful diet and cleanliness for their children. The Virginia Beach Railway furnishes free transportation to mothers and children to and from the hospital.

A VICTIM TO THE MORPHINE HABIT.—The son of a late prominent Chicago lawyer was recently picked up unconscious in the street from the effects of morphine. He said at the station house the next day that his life had been wrecked by following his physician's advice. Six years ago he was recommended to take morphine as an antidote for his appetite for drink. The habit grew upon him until he became wholly a slave to it. He has spent one year in the Washingtonian Home without being cured of the appetite. It is possible that the unfortunate man told the truth, but it is probable that he did not. One can scarcely imagine a physician so ignorant of therapeutics or so devoid of moral sense as to substitute the morphine for the alcohol habit—unless he were a charlatan of the most disgraceful type.

DIRTY MATTRESS FILLING.—At the meeting of the Provincial Board of Health of Ontario on Nov. 9 a letter from a doctor in Guelph was read, enclosing a sample of the wool batting found in a mattress direct from the manufacturer's hands. It was a collection of the dirty odds and

ends about the floor of a woolen factory, including the sweepings. It had an offensive smell and was stated to have a most pernicious effect on the health of the unfortunate people who have to sleep on such beds. The letter concluded by urging upon the Board of Health the necessity of pressing on the Government to have an inspector appointed wherever such manufactures exist, with power to prevent such "abominable outrages upon the health of the unsuspecting public."

EPIDEMIC OF FIBRINOUS PNEUMONIA.—At the recent Congress of Polish Physicians and Naturalists at Lemberg, JAWORSKI and CHROSTOWSKI mentioned a small epidemic of fibrinous pneumonia observed by them. There were five cases of the disease in one house; the patients had been employed in cleaning out a ditch. It was found that the house in which these cases occurred had not been free from pneumonia since 1860. The pneumococcus of Friedländer was found in the exudation taken from the lungs of these patients by means of the needle of a Pravaz' syringe, and also in the earth of the ditch mentioned.

TO INVESTIGATE CATTLE DISEASE.—The Bureau of Animal Industry has requested Dr. Bowhill, of San Francisco to proceed forthwith to San Diego, in connection with the investigation into the cattle diseases on the Pacific coast. Dr. Bowhill will take all apparatus necessary to explain to Boards of Supervisors, and others who may be interested, the means by which different diseases may be discovered and controlled. His mission is purely a protective one, and so far as he is aware there is no increase in the mortality of cattle, nor any new disease developing.

HEALTH AT GREAT ELEVATIONS.—Dr. A. Tucker Wise, in a recently published work, advises patients afflicted with the following diseases to refrain from seeking health at high elevations: Diseases of the brain, heart, or large vessels; tendency to articular rheumatism; kidney diseases (during winter); acute inflammations of throat or larynx; some diseases of bladder or prostate; also, persons somewhat advanced in years should not visit the mountains unless the circulating system is sound.

AN OPENING FOR HOSPITAL INTERNES.—It is said that a circular will soon be issued from the Surgeon-General's office to the resident physicians

of all the civil hospitals in the country for the purpose of giving them an opportunity to appear before a board of medical officers in May, 1889, and enter the army on that date if they so desire, it being the special wish of the Surgeon-General to secure for the medical corps of the army the services of young men who have gained practical experience in their profession by a residence in the large city hospitals.

THE AMERICAN PUBLIC HEALTH ASSOCIATION closed its annual meeting at Milwaukee November 23. The following were chosen officers for the ensuing year: President, Dr. H. A. Johnson, of Chicago; Vice-Presidents, Dr. Jerome Cochran, of Mobile, and Dr. Frederick Montizambert, of Quebec; Secretary, Dr. I. A. Watson, of Concord; Treasurer, Dr. J. Berrien Lindsley, of Nashville. Brooklyn, N. Y., was selected as the place for the next annual meeting.

A NATIONAL BOARD OF HEALTH.—The Richmond, Va., Chamber of Commerce has received a memorial from the Chamber of Commerce, of New Orleans, asking the assistance of the Chamber in the matter of getting legislation to create a National board of health. Hon. George L. Christian, a member of the board, will examine into the matter and give his views.

"DR." CLARKE'S CLERK FINED.—Conrad Lunds, a clerk in "Dr." Clarke's office on Clark street, Chicago, has been fined \$100 and costs for practicing medicine without a license. The prosecution was brought by the State Board of Health, and is an outcome of the failure hitherto of its efforts to suppress "Dr." Clarke's business as a "specialist."

ACUTE GASTRITIS, not yellow fever was the malady of a young woman removed to Bellevue Hospital on Nov. 17, with "symptoms of yellow fever." She died next morning. Even had she had yellow fever, her removal was wholly unnecessary, and probably contributed to her death.

THE PENNSYLVANIA STATE MEDICAL SOCIETY will meet in Pittsburgh in June, 1889. Drs. E. A. Wood and Wm. S. Foster have been selected by the local profession as Chairman and Secretary of the Reception Committee.

DR. J. ADAMS ALLEN, of Chicago, has recently given his library of more than 2,000 volumes to the Presbyterian Hospital of this city.

SOCIETY PROCEEDINGS.

Medical Society of Virginia.

Nineteenth Annual Session, held at Norfolk, Virginia, Oct. 23, 24, and 25, 1888.

(Concluded from page 749.)

FRIDAY, OCTOBER 26—THIRD DAY.

THE PRESIDENT IN THE CHAIR.

DR. JOHN B. HAMILTON, Surgeon-General U. S. Marine Hospital Service, was introduced as an invited guest and, in response to requests, gave an

ACCOUNT OF THE EPIDEMIC OF YELLOW FEVER
IN FLORIDA.

He said he could not hope to say anything in the nature of *instruction* to this old and distinguished Association, especially as what he shall say is entirely unpremeditated and without preparation. But in epidemiology *history* is always interesting, and he will therefore briefly give the outline history of the epidemic of yellow fever now existing in the State of Florida.

Last year the yellow fever appeared in Key West in the family of a restaurant keeper by the name of Baker. It appears that a family of Bolios, who had kept hotel in Havana in various places, the last being called the *Quinta-Avenida* (Fifth Avenue Hotel), unfortunately for Florida, emigrated to Key West. Their household effects, under the regulations governing the regular lines of steamers, could not be shipped by them, so they shipped their effects, consisting of bedding and various articles of furniture, by an irregular "tramp," not now running, called the "Cochran." There was no objection officially made at Key West, as there was neither Government nor local quarantine, and these were landed and stored above Baker's restaurant. The Baker family died of the fever, and thus the fever started and rapidly became epidemic. The Government, under the operation of that section of the statutes forbidding interference with local authorities, did nothing except, on request of the Governor, to aid the local board, established a dispensary and paid the expenses of the city hospital. To enable the speedy depopulation of the city, a refuge camp was established at Egmont Key, at the mouth of Tampa Bay. No case from Egmont communicated the disease.

The first cases in Tampa were kept secret from August to October 21. A family of Italians by the name of Turk, fruit dealers, brought the fever into Tampa. The steamers had refused, under orders from the Hillsborough County Board of Health, to bring fruit from Havana or Key West. These Italians finding it impossible to continue in business set up a smuggling line and brought

fruit by way of Punta Gorda Bay, and overland to Tampa. For this purpose the man Turk and his assistant Peep, or "Pete," made frequent surreptitious visits to Key West while the disease was there epidemic, and blankets were purchased in the infected city, and used while on the overland trip and brought to Tampa. It is a significant fact that the whole family of the Italians were the first taken sick, that they were not publicly known to have been out of the town, although the fact is now known. The measures taken by the Government were simply to conform to the wishes of the Governor to *aid the Hillsborough County Board of Health*. The duty of preventing the spread of the disease was undertaken by the Florida State Protective Association, an organization consisting of one representative from each County Board of Health, under the presidency of Dr. King Wyley, of Sanford. In December the Association raised the quarantine against Tampa; the County Board of Health asserted that the disease had disappeared, but unfortunately the disease had not been stamped out, and although the cases of fever lingered all winter in Tampa its existence there was bitterly denied.

From Tampa the disease spread to Plant City, Manatee and other places, and it is now believed that the fever was at Jacksonville as early as February. Dr. Guitéras, of the Marine Hospital Service, an acknowledged expert, says that, in his judgment, at least two of the cases of "society fever," of which there were over thirty reported in Jacksonville in that month, had the well-marked clinical history of yellow fever. Nine of these cases died. Dr. Potts treated cases in Bay Street in June, and there were probably cases continuously until the formal announcement was made.

So-called isolated cases had been reported in Jacksonville after the case in Bay street had been treated in June by Dr. Potts, but that the local authorities denied the presence of an epidemic and placed a guard around each case. This state of things existed until August 26, when the spread of the disease in Jacksonville became so great, cases springing up at various points in the city, that could not be traced to any of the so-called isolated cases, that the authorities had to declare the disease epidemic.

The disease had been introduced in Decatur, Alabama, by a man who had gone from Jacksonville while all of the cases in that city had been reported under guard. His ticket had been from some point outside of the infected city, and consequently he was not denied admittance.

The fever had been introduced in Gainesville and Fernandina by baseball players who had played a game of ball in Jacksonville before the epidemic nature of the disease had been declared and then returned to these cities.

He then went on to explain the Government work at Camp Perry, and said that since its

establishment there had been only one death from yellow fever in the fever hospital at the Camp. He said that the experience of the physicians at the camp went to show that five days was the incubative period, and that when persons had been in the Camp for that length of time and did not develop the disease, there was no danger of their having it, no person having spent ten days in the camp had developed the fever after leaving the station.

He spoke of the lack of local inspection at Tampa where the disease first appeared this season, and said that if the first cases had been reported that there would probably have been no epidemic, and he also said that he had proof to show that when the case of McCormack was reported as the first in Jacksonville, that the fever was even then epidemic.

He also stated that while the fever was raging at Key West, he, at the request of several health officers, had prepared a bill providing for the establishment of a State Board of Health, but it was laid on the table by the Florida Legislature through motives of false economy.

He concluded by saying that the inspection of Florida cities, ordered by the Government, had developed the fact that the yellow fever was epidemic in both Enterprise and Fernandina.

DR. RANDOLPH BARKSDALE, of Petersburg, read a

REPORT ON PSYCHOLOGY AND NEUROLOGY.

He sketched the history of the treatment of insanity. Over 2,000 years ago, insanity was believed to be a state of possession by the devil, and the treatment was directed towards driving the devil out, and punishment of the person for letting the devil get control of him. Hippocrates was the first to cast off such superstition, and announced that insanity was the result of disease of the brain; that the mind—the soul—could not be diseased, and his doctrines prevailed and resulted in improved treatment. But after the fall of the Roman Empire these doctrines passed away, and again the insane became the victims of persecution and of punishment. And it was not until 1795 that Pinel inaugurated the reformation in treatment which prevails to this day. He announced that insanity is a disease, and that the insane are therefore entitled to all the care and tenderness of the skilled physician and nurse. From year to year since then, improvements in the provisions for and care of the insane have taken place, as of other diseases. Under the head of *neurology*, Dr. Barksdale referred to some of the approved uses of electricity in medicine, and also noted approvingly some statements of Dr. Seguin and others regarding the localization of cerebral functions with reference to the help of such information to the surgeon in selecting the site for trephining in certain obscure brain injuries or diseases.

DR. W. D. HOOPER, of Liberty, in his REPORT ON THE ADVANCES IN THE PRACTICE OF MEDICINE,

gave a brief account of the progress of the germ theory in the last twelve months, saying the advance had been in rather a "retrograde" direction, as Sternberg proves Freire's inoculations for yellow fever are a failure, and M. Gibier has not discovered the true germ of that disease, but thinks he himself has! Pasteur's patients are dying of hydrophobia, but Koch is more fortunate with his bacillus, as it was accepted as true by a recent Congress for the study of tuberculosis which met in Paris. Pasteur thinks M. Gamalier, of Odessa, has discovered a true inoculation for cholera, and referred his communication to the prize committee of the Academy of Sciences.

DR. BARKSDALE also gave a description of a NEW METHOD OF TREATING ULCERATED BLADDER WITH PROSTATIC ENLARGEMENT, BY RE- PEATED IRRIGATIONS

of that organ with warm salt and water holding iodoform in suspension. He uses for the purpose a Y-shaped tube 5 inches long, attaching the tube of a fountain syringe to one of the short arms and a rubber tube to the other, while the long arm of the tube is inserted into the catheter. He reported two cases: the first, aged 78 years, relieved on his deathbed when all other means had failed; the second, aged 75, perfectly cured, as he now sleeps all night without emptying his bladder, and rides horseback during the day.

DR. C. E. BUSEY, of Lynchburg, read a paper on

CULTIVATION OF VOCAL MUSIC IN THE SCHOOLS, AS ONE OF THE MEANS OF PREVENTING PHTHISIS.

He states it as a well-known fact that those nations which are given to the culture of vocal music are strong, vigorous races, with broad, expansive chests. If an hour a day was devoted in our public schools to the development of vocal music, there would not be the sad spectacle of the drooping, withered, hollow-chested, round-shouldered children. There is too great a tendency to sacrifice physical health upon the altar of learning. Vocal music is gymnastic exercise of the lungs, producing increased expansion of the lungs by development of the lung tissue itself. The lungs in improved breeds of cattle, which naturally take little exercise and are domiciled much of the time, are considerably reduced in size when compared with those animals running at liberty; and so it is with the human race who lead inactive lives caused by civilization. Phthisis generally begins at the apices of the lungs because these parts are more inactive, and because the bronchial tubes are so arranged that they carry the inspired air with greater facility to the bases than to the api-

ces. During inactivity, a person will ordinarily breathe about 480 cubic inches of air per minute. If he will walk at the rate of six miles an hour, he will breathe 3,260 cubic inches. In singing, this increases more than in walking, as to sing well requires all of the capacity of the lungs. The instructor of vocal music, in addition to his musical education, should understand the anatomy and physiology of the respiratory organs.

DR. G. McDONALD, of Union, West Virginia, in his

REPORT ON OBSTETRICS,

spoke of the value of *asepsis and antisepsis in midwifery*, repeating the precautions that have time and again been repeated in books, journals, etc. As to *anæsthetics* in labor, chloral hydrate, in 15 grain doses, every half hour or so, is better during the early stages of labor than chloroform, which latter should be reserved for the final throes. The placenta is best expelled by *Credé's method*. It has been recommended to pack the cavity of the uterus with iodoform gauze in cases of *post-partum hæmorrhage*, after the failure of ergot, hot or cold injections, etc.; but as a rule, empty the uterus promptly and cause tonic contraction of the organ. In cases of *placenta prævia* the tampon may undoubtedly be used to gain time for sufficient dilatation of the os uteri in order to use the hand, etc. When a case of *occipito-posterior position* is seen before rupture of the membranes, and before the head and shoulders become impacted in the pelvis, introduce the aseptic hand (patient under chloroform), catch the head between the fingers and thumb and rotate the occiput forwards, when the labor may proceed as a normal case. In regard to *face presentations*, when the chin falls into the hollow of the sacrum, bring the chin forward, and hold it there until expelled. The Veit-Smellie method is advocated for delivery of the after-coming head in *breech cases*. The importance of laparotomy, etc., in rare instances in obstetrics is dwelt upon.

Dr. W. W. Parker, of Richmond, read a paper entitled: *What is the Duty of a Doctor to a Patient suffering from Malignant Disease?*

DR. GEO. B. McCORKLE, of Covington, presented the

REPORT ON DISEASES OF WOMEN.

In regard to *electricity*, he presented the conclusions of Dr. Martin, of Chicago, as to its use in the treatment of fibroids of the uterus: It is free from danger; is absolutely painless; invariably checks excessive hæmorrhage; rapidly reduces the size of the tumors; stops neuralgic pains; its use is based upon the principle of the exact dosage of electricity. Electricity has likewise proved useful in removing tumors from the female breast, in the practice of Dr. Garnett, of Berlin. It has also been useful in increasing the flow of milk in mothers' breasts. Dr. Byford uses electricity in

paralysis of the bladder after inflammation has subsided. Dr. Rockwell has successfully used it in amenorrhœa. Even in a case of complete extrusion of the uterus electricity has been successfully resorted to to retain the organ in place after its reposition. Operative procedures seem to be taking the place of pessaries. Dilating and curetting the uterine cavity for numerous growths on its inner surface, etc., are again becoming very popular.

Dr. Oscar Wiley, of Salem, made the report on *Diseases of Children*.

Dr. M. A. Rust read a paper entitled: *Mysticism in the Development of Medicine*.

Dr. William L. Robinson, of Danville, read a paper on the *Conduct of Enciente Women before and after Delivery*.

DR. ALFRED C. PALMER, of Norfolk, read the

REPORT ON OPHTHALMOLOGY.

He divided his subject so as to speak systematically of whatever concerned: (1) the lids, lachrymal apparatus and orbit; (2) the cornea, conjunctiva and sclera; (3) accommodation, refraction and the motor apparatus; (4) the uveal tract, vitreous, aqueous, and lenses; (5) the retina and optic nerve.

DR. JOHN T. FRANCIS, of Norfolk, presented the

REPORT ON OTOTOLOGY AND LARYNGOLOGY.

He first speaks of the pathology of aural vertigo, and then, with reference to the treatment of otorrhœa, says that lactic acid attacks only the fungous growths, and diminishes the secretion and causes the odor to disappear. Pilocarpin is also recommended. Photoxylin (20 per cent. solution) closed a perforation in the membrana tympani. The ear is first syringed with boracic acid solution, and dried with absorbent cotton. Then the edges of the perforation are painted several times until the perforation is covered. He reports a case of serious injury to the ear as a result of simply syringing that organ for a purulent discharge. The remainder of the report is on laryngology, and speaks mostly of laryngeal tumors, tracheotomy, chronic and atrophic rhinitis, hay fever, etc.

DR. CHAS. M. SHIELDS, of Richmond, read a paper on

ENLARGED TONSILS—WHAT SHALL WE DO WITH THEM?

He had never seen a single case of true hypertrophied tonsils permanently removed by the application of any of the astringents, absorbents or mild caustics suggested, or by the injection into their substance of iodine, ergotin, etc. In soft varieties or in the case of young children where prompt contraction of the bloodvessels follows cutting, he uses the tonsillotome; but in the hard fibrous varieties and in adults, where there is

danger of alarming hemorrhage he prefers the use of the galvano-cautery.

From six to eight points over the surface of the tonsil should be touched with the moxa point electrode heated to a red heat at one sitting, and usually from four to eight sittings are required to shrink up the tonsil thoroughly. If a 10 per cent. solution of cocaine is first applied, patients will usually complain of no pain. Dr. Shield's conclusions were: In all cases except in young children or where the tonsil is very soft, the galvano-cautery method of removal is to be preferred, because, 1st. The tonsil can be more nearly restored to its normal proportions. 2nd. Irregularly shaped masses of hypertrophied tissue can be removed that could not be encircled by the tonsillotome. 3rd. The effect seems to be more permanent. 4th. It is devoid of all danger.

Dr. Joseph A. White, of Richmond Va., read a paper on *Improved means of Diagnosis and Surgical Treatment of Nasal and Throat Troubles, with practical remarks.*

After the adoption of a number of resolutions simply of State or local interest, etc., this session of the society adjourned *sine die*.

The social features were excursions, drivings, banquetings, etc. Of course they were popular, as they were all well prepared, and most hospitably given. The effect of this session upon the profession of this State was most excellent.

Obstetrical Society of Philadelphia.

Stated Meeting, October 4, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D.,
IN THE CHAIR.

(Continued from page 753.)

DR. W. J. TAYLOR presented with the following remarks:

THREE UTERINE MYOMATA.

These three tumors were removed to-day from a case of considerable interest. The patient, a woman, æt. 30 years, was married on the 7th of last May. On the 20th she had her last menstruation, and from that time considered herself pregnant. The abdomen began to swell and she had a good deal of pain. A few days ago she sent for me, and I found her with the abdomen much enlarged and presenting the symptoms of pregnancy. On the right side, however, there was a hard mass which puzzled me very much. She was seen by Drs. W. W. Keen and B. C. Hirst, and the conclusion was reached that an operation was necessary. To-day abdominal section was made. It was found that the uterus contained a fetus, and that there were three fibroid tumors: the largest was sub-peritoneal, the smallest was

attached by a small pedicle, and the second in size was also sub-peritoneal. These were removed, and the patient is at present doing well.

DR. W. W. KEEN said that Dr. Taylor had not done himself justice in his modest narration of the steps of the operation and in his reference to the question of diagnosis. When I saw the patient last Monday it was a question whether the large mass on the right side was a uterine myomata or a tubal pregnancy. It had grown rapidly and *pari passu* with the uterus. Two facts in favor of its being a solid tumor were its density, and the fact that the pulsation of the aorta could be distinctly heard with the stethoscope at every point over the tumor. Its rapid growth seemed to be opposed to the idea of myoma. Dr. Hirst was of the opinion that it was a tubal pregnancy, at the same time recognizing an intra-uterine fœtus also. She had albuminuria. When Dr. Taylor opened the abdomen two large tumors presented, which coalesced below but were separated above. Passing the hand into the abdomen the left tube and ovary were found normal. On the right side, it was at first not possible to recognize the ovary and tube, but by enlarging the incision the hand was passed well down, and the ovary and tube found. By the side of this tube was a vein considerably larger than my thumb. The pregnant uterus was recognized as the large tumor to the left. It was soft, elastic, and dark in color. That to the right was recognized as a neoplasm. While I lifted with difficulty the upper end of the tumor, Dr. Taylor incised its capsule and enucleated it until he came to the attachment to the uterus which was over a space of three or four inches in diameter, when the weight of the tumor then caused the uterine tissue to tear, and the large sinuses began to bleed freely. I next grasped the pedicle with the thumbs and forefingers of both hands while he stripped off the sac. The tumor was thus quickly removed, and the uterine tissue and the wall of the sac were seized with large hæmostatics and hæmorrhage controlled. It was necessary at several points to introduce sutures into the uterine wall itself to control the bleeding. The redundant portion of the sac of the tumor was cut away, and the edges brought together with the continuous catgut suture; a drainage tube was passed down into its cavity. In at least two places, and possibly four, there were, upon the uterine wall small masses about half the size of my little finger-nail. These looked like beginning malignant tumors. From the appearance and the rapidity of the growth, I think this may be a sarcomatous tumor, though it is possibly a simple myoma.

DR. PARVIN thought that there was one point that even Dr. Keen had omitted. He saw the operation and the great mass of the tumor was included between the layers of the R. broad liga-

ment, so that the first incision was through the anterior layer of the ligament. Formerly in removing a subperitoneal fibroid from the posterior surface of the uterus the pedicle partially tore while the ligature was being applied and there was free hæmorrhage. He finally succeeded in stopping the bleeding by the use of the continuous catgut suture, after other measures had failed.

DR. HIRST said that Dr. Keen had certainly expressed his views. The symptoms pointed strongly to extra-uterine pregnancy. If the case had been allowed to go on to term Cæsarean section would have been required, as the tumor filled up the pelvis. He had looked up this subject of injuries to the pregnant uterus and had found some interesting cases. In one case the woman was thrown to the ground and jumped upon when six months pregnant. The fœtus was killed but she went on to term. In another case trachelorrhaphy was performed during the second month of pregnancy. This case went on to term. In another instance a number of leeches were applied to the cervix of a pregnant uterus without any interruption to pregnancy. In a case I had last spring the woman was squeezed between a bale of goods and the wall and was seriously injured, but she went on to term. A German operator has such confidence in his ability to plunge a trocar into the uterus without doing harm that he advocates the occasional withdrawal by aspiration of the liquid in hydramnios with very great distension of the uterus, allowing the child to go on to term.

DR. PARISH said that the removal of ovarian tumors during pregnancy was recognized as a proper operation, but that the removal of uterine subperitoneal fibroid tumors during pregnancy was not a proper operation, except under certain special circumstances. The injuries necessarily inflicted on the uterus in their removal are liable to induce abortion. It would be interesting to have the further history of this case. The microscope alone could determine the character of this growth. Under ordinary circumstances the rapidity of the growth would point to sarcoma, but it is well-known that in pregnancy fibroid tumors occasionally take on a rapid growth. He supposed that Dr. Hirst did not refer to the cases he had cited as indicating rules of practice. It must be the urgency of the condition which justifies operations on the pregnant uterus. While pregnancy may go on after injuries to the uterus there are numerous unreported cases where the opposite has been the result. Where a subperitoneal tumor can be lifted from the pelvis pregnancy may go on.

DR. J. PRICE thought that obstetrically the case was one of great importance. Some time ago he had called attention to three parallel cases. They all went to term with a pelvic tumor and died undelivered. The question of differential diagnosis

scarcely concerned many operators at present, all that was required was the knowledge that there was a tumor present. We should never wait until the patient's general health has been impaired, as this is a departure from that generally followed in general surgery.

DR. HOFFMAN had been recently consulted by a woman who stated that she was pregnant and that at previous labors the baby "had to be mashed up." The pelvic cavity was found to be filled with a tumor and she was advised to undergo an operation for its removal. This she refused. It seemed to him that there could be no doubt of the propriety of immediate operation in cases like the one before him.

DR. B. F. BAER believed that in this case, after the exploratory incision had been made and it was found that no extra-uterine pregnancy existed, it would have been better to have closed the incision than to have removed this amply located solid tumor; but since the removal was determined upon, it would have been better to have amputated the uterus at the neck than to have permitted it to remain with a great wound in its side and in the broad ligament. It is not likely that, after such a serious operation, the pregnancy will go on to term anyway, and abortion occurring within a short time after the operation will certainly add to the risks of the patient. He asked if there were any subjective signs of pregnancy (extra-uterine) in this case, such as the peculiar pains, uterine hæmorrhage or discharge of decidua?

DR. KEEN thought that the removal of the uterus would have been a wholly unjustifiable procedure. It was possible that the woman might miscarry, but it was also possible that she would go to term. It has been shown that pregnancy is not necessarily a bar to operation. Not only would the sacrifice of the fœtus have been unjustifiable, but hysterectomy would have made a young married woman sterile. The added dangers of hysterectomy, too, might have turned the scale against the patient.

DR. M. PRICE asked if Dr. Baer would expect to have uterine hæmorrhage in a case of extra-uterine pregnancy where there was also a fœtus in the uterine cavity?

DR. B. F. BAER said that he would expect in such a condition that, as the result of the extra-uterine irritation, abortion would take place, and then we would have both hæmorrhage and decidua. In regard to the removal of the uterus in this case, it seemed that Dr. Keen condemned the procedure because of his anxiety to save the child. He, however, believed that the child would have had a better chance for its life if nothing had been done. But if operative measures were imperative, then he still held to his former opinion. In answer to still further questioning from Dr. M. Price, he said that he believed that hæmorrhage may occur and the extra-uterine sac remain unruptured.

tured. He had seen a case which supported that view. The patient, after missing her menses for two months, was one day seized with severe pain in the right iliac region, which was followed by shock. She fell in her yard, and when her physician arrived he found a condition of shock as well as hæmorrhage. A few weeks later she had a similar attack. He was then sent for and the diagnosis of extra-uterine pregnancy arrived at. This was five years ago, and Thomas' method of operating by the vagina and opening the sac with a hot knife was followed. The sac was found with no evidence of rupture in it. The liquor amnii was clear and no evidence of hæmorrhage into the cyst, which there would have been had a rupture taken place. The fœtus was indeed alive. The patient died on the fifth day after operation.

DR. WM. J. TAYLOR closed the discussion by saying that in this case the tumor was absolutely fixed. The woman's general condition was poor; the pulse 120; the patient not able to eat; had suffered intense pain and diarrhœa for a number of days previously. The tumor was also growing rapidly. The urgency of the case seemed to call for some relief. There was albuminuria. If the matter had been allowed to go on to term—provided the woman had lived that long—the risks to both mother and child would have been greater than they were at the present time.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Transmissibility of Tetanus—Infectious Nature of Tetanus—Osseous Grafts—Corrosive Sublimate in Cholera—Management of Abortion—Periodical Neuralgia of the Cornea.

Professor Verneuil, who introduced into science the notion of the contagiousness of tetanus, and its equine origin, follows the development of this idea with great solicitude and embraces every opportunity of justifying his views on the subject. At a recent meeting of the Academy of Medicine he read a report on two papers, the one by Dr. P. Berger, entitled, "The transmissibility of tetanus from man to man," and the other by Dr. G. Richelot "on the infectious nature of tetanus." M. Verneuil reviewed the whole subject in a most masterly manner, and terminated his report with the following conclusions: 1. The intra-human transmission which although demonstrated as yet by only a small number of facts, cannot be contested in principle. 2. This transmission does not appear to be affected by the atmosphere, but is accomplished by direct or indirect contact. 3. The first mode, that is, "immediate contagion," is not as yet established by any decisive fact. The

second mode, or "mediate contagion," is supported, on the contrary, by a great number of clinical proofs. 4. It is sometimes still very difficult to discover the veritable agent of transfer among the numerous and varied intermediary means graduated between the first tetanic subject and those that follow. 5. This research should be prosecuted with pertinacity, for it alone will teach us to prevent a mode of extension of the malady, which is perhaps rare, but altogether indisputable.

At the same meeting Dr. A. Guérin presented a certain number of osseous grafts practiced by Dr. Mossè, of Montpellier. These operations were on the rabbit, the dog, and the monkey, and were thus classified: 1. Re-implantation of a fragment of the skull removed by trephining. 2. Transplantation of the fragment on an animal of the same species. 3. Transplantation on an animal of a different species. It is sufficient to preserve the periosteum for this re-implantation to be effected with success.

Dr. Yvert, a French army surgeon, has made a communication to the Academy of Sciences on the treatment of cholera with corrosive sublimate. During his service at Tonquin he had occasion to employ the drug in doses of from 2 to 4 centigrams a day, in subjects affected with cholera. The results were most encouraging, for of 45 patients suffering from the disease, 9 only had succumbed, thus reducing the mortality to 20 per cent. He had also recourse to the same medication in a certain number of convalescent soldiers, the greater number of whom had suffered from dysentery, and although they had sojourned in the midst of cholera patients, not one was affected by the cholera epidemic, thanks to the absorption of the bichloride of mercury which was administered to them as a preventive measure.

The following are rules published by Dr. Nitot in the *Revue Obstétricale* on the management of cases of abortion: 1. In presence of the imminence of abortion we should, if there is still time, notwithstanding a commencement of uterine contractions and loss of blood, prevent the abortion being effected, in prescribing absolute rest in bed, enemata of laudanum or, what is still better, hypodermic injections of morphia. 2. If the abortion is inevitable, we should favor the spontaneous expulsion of the product of conception, opposing at the same time a too abundant loss of blood. With this view absolute rest should be insisted on, and vaginal injections, which should be hot (45° C.) and antiseptic, should be prescribed every two or three hours. These will favor the dilatation of the uterine neck and combat the hæmorrhage. However, should the flow of blood be too abundant, vaginal plugging should be employed. This measure will act not only in arresting the hæmorrhage, but will hasten the termination of the abortion. The administration of the ergot of

rye should be guarded against; as the drug, in provoking contractions of the neck of the womb, is liable to imprison the placenta in the uterine cavity. 3. But if, in spite of these precautions, the abortion, clearly established, lingers some time; if the placenta, adherent or not, remains imprisoned in the uterine cavity, it would be better to accomplish artificial delivery than to temporize longer, and to empty the uterus in order to avoid the dangers of a tardy abortion, such as hæmorrhage more or less grave, or septicæmia, which are likely to occur. In acting thus, the future safety of the patient is ensured. 4. Finally, if it should become necessary to combat one of these dreaded complications which may break out, such as septic fever or repeated abundant hæmorrhage, which the plugging and the hot injections might have arrested only momentarily, no more hesitation should be permitted. It will be necessary to intervene with the fingers if the uterus is in a state of sufficient dilatation, or in practicing the antiseptic "cavage" or cleansing of the uterus after previous dilatation, if this is necessary; for to wait longer, in this case, would be to expose the life of the patient.

Dr. Granché, of Lyons, has described an affection which is rather frequent, consisting in a sort of periodical and ill-defined neuralgia of the cornea, following a very slight traumatism of this membrane. The traumatism consists, more frequently, in a simple grazing by the leaf of a shrub, the finger of a little child, or any other soft body which cannot do much hurt. To this condition he has applied the term "traumatic keratalgia." Soon after the accident, although the cornea presents no excoriation, the patient suffers a good deal and periodically from neuralgic phenomena which are reproduced irregularly for some years, like rheumatoid pains. One can only attribute these accidents to a slight neuritis of one or more of the ciliary nervous filaments of the cornea which are found in the sphere of action of this slight traumatism. If the stronger traumatisms of the cornea, such as those resulting from the incrustation of a splinter of iron, or any other metal, do not leave behind them similar neuralgias, it is because the nervous filaments touched had been destroyed, and not simply bruised. The only remedy which appears to relieve these patients is the employment of cocaine. A. B.

THE PASTEUR INSTITUTE in Paris was formally opened on November 14 by President Carnot. Pasteur himself was present and was loudly cheered by the people.

TRINITY MEDICAL DINNER.—The Students of Trinity Medical College held their twelfth annual banquet on Nov. 13. More than 250 guests were present.

DOMESTIC CORRESPONDENCE.

LETTER FROM BOSTON.

(FROM OUR OWN CORRESPONDENT.)

Acute Lobar Pneumonia in Children—Pelvic Hæmatocoele; Operation by Laparotomy; Suture of Cyst to Abdominal Wall and Drainage—Laparotomy for Volvulus—Removal of a large part of the Frontal Bone for Compound Fracture.

At the meeting of the Suffolk District Medical Society, on Oct. 27, Dr. C. W. Townsend read an extensive and interesting paper on "Acute Lobar Pneumonia in Children." He said that we should make a distinction between *lobar* and *lobular or broncho-pneumonia*, although this is not generally done, it being customary to find both forms classed together in the returns as pneumonia. Lobar pneumonia is an acute specific disease, whereas lobular or broncho-pneumonia is a secondary affection and is almost always secondary to a bronchitis affecting the smaller bronchi. When a pneumonia is spoken of in young children, the lobular pneumonia is the form that is generally understood to be in consideration. This, however, should not be the case; for the lobar form is by no means uncommon, the writer having recently seen 42 cases of undoubted lobar pneumonia in children under 10 years of age. Of these cases, 5 occurred in children under 1 year of age; 5 occurred in children between 1 and 2 years old, and 7 occurred in children between 2 and 3 years old.

Probably the reason that pneumonitis is so frequently overlooked in infants is because the signs that are diagnostic of pneumonitis in adults are in large measure either modified or wanting. These signs are:

1. Sudden onset with rigor.
2. Localized pain in the affected side.
3. Cough.
4. Rusty expectoration.
5. A characteristic high temperature.
 1. The onset is generally sudden in young children, and the chills or rigors are almost always absent. In their stead are found vomiting and convulsions.
 2. Pain is frequently absent in young children, and when present it may be elsewhere than in the affected side, *e.g.*, it is frequently referred to the abdomen.
 3. The cough is generally present. It is frequently loose and hacking. In 6 of the above-mentioned 42 cases there was no cough at the onset. It frequently increases as the disease increases.
 4. The rusty expectoration is generally absent in young children, for it is swallowed. Of the above cases only 3 cases, *æ.t.* respectively 7, 8, and 10 years, had any rusty expectoration.
 5. The increasing high temperature is charac-

teristic in young children as found in 37 of the above cases, 29 cases ending by crisis and 8 by lysis. The seventh day was generally found favorable for the crisis, the temperature rose continuously up to 104° as a rule. The highest temperature reached was 106° in one case. None failed to reach 103° .

A change in the disposition of the child generally occurs after the crisis. The cough frequently continues. The physical signs generally coincide with the temperature. They may be tardy in making their appearance. The true crepitant râle is frequently not found but vocal fremitus and consolidation will decide. It is highly probable that some of the so-called acute febriculas of children are really pneumonia. The expiratory moan and dilatation of the alar nasi are not characteristic. Cerebral pneumonia frequently means only pneumonia in a child of a highly nervous organization, and there are no cerebral or meningeal lesions. Herpes occurred in only three of the above cases.

The diagnosis must be frequently made from the history. Pneumonia is sudden and broncho-pneumonia is less sudden and generally follows bronchitis. In pneumonia the temperature is higher than in broncho-pneumonia. Broncho-pneumonia never ends in crisis. The prognosis is generally favorable. Of the above-mentioned 42 cases only two died and both of these were feeble, ill-nourished children. One was rachitic and the other had a large abscess. Several cases have been reported where children have been born with pneumonia, the disease having commenced in utero. All of these cases are fatal.

In the discussion, Dr. Francis Minot said, that the fact is important of the great frequency with which it can be *demonstrated* that pneumonia has a local organ, *i.e.*, that it is infectious. It may occur successively in the same house in different seasons.

Dr. T. M. Rotch said that in children with pneumonia there is an absence of the physical signs that occur in adults. The child may be totally unconscious for a week, and then the pneumonia shows itself. He was reminded of two cases in one family, one child being aged $3\frac{1}{2}$ years and the other 16 months. In the elder the attack commenced twelve or fourteen hours later than in the younger. For five days both were unconscious and vomiting, with symptoms of acute milk poisoning, and there were no physical signs. Their food was changed and they remained unconscious for three days more, when the left lungs showed a commencing solid area and the temperature went up, together with the other signs of a real pneumonia. This continued for seven days and ended in crisis, and all along the signs in the elder child continued to be twelve or fourteen hours later than in the younger. In the treatment antifebrin is a good thing, but in

administering it we should avoid giving it at the time of the crisis, when it is dangerous.

In the absence of the writer, the Secretary read a paper by Dr. C. B. Porter, on "Pelvic Hæmatocele. Operation by Laparotomy,—Suture of Cyst to Abdominal Wound and Drainage,—Recovery." The patient was 30 years old and unmarried. Her catamenia had been regular and normal every four weeks, the flow lasting four days. During the two weeks previous to being seen, she had been loosing appetite and strength. Her bowels were regular, and she continued to work at her ordinary duties. One night she was awakened from sleep by severe pain in the left iliac region at first and then shifted. Then there was vomiting and small movements. A swelling appeared in the right iliac region. On examination she was lying on her back with her legs extended and her countenance had an anxious expression. Pulse 68. A swelling was found in the right iliac region. Per vaginam the cervix uteri was found movable. The urine was examined and was normal. The vomiting became troublesome. The urine had to be drawn with the catheter. On the third day it was decided to operate. An incision was made one inch above Poupart's ligament. A large cystic tumor with tense walls at once came into view. This was stitched to the edges of the wound, so as to shut off the abdominal cavity and it was then opened. Three pints of a dark bloody fluid were then removed. This was examined by the microscope and was found to contain no formed elements. It was probably ascitic fluid with blood. There were no clots. A large drainage tube was put in and the sac was washed with a hot solution of sulpho-naphthol. The third day the discharge was colored. Three weeks afterwards when it was syringed, some threads of necrosed membrane came away. There was steady recovery, and seven weeks after the operation (near 16th) there was very little discharge. On April 3rd she left the hospital.

Dr. M. L. Richardson read a paper on "Laparotomy for Volvulus." On the 3d of July he operated on a man 57 years old, who had a history as follows: On the 28th of June he had a chill and a sensation of fullness of the abdomen and twisting of the intestines, as he himself expressed it. Two days later even a cup of tea caused him to feel very full. His temperature was 99.4 . There was pain in the left iliac region. July 2d, there was no pain and he had two liquid stools. Note this improvement. On July 3d he had a collapse. When seen he had dulness in abdomen, most marked on left side in iliac region. There was vomiting and now severe signs of obstruction. Laparotomy determined upon as a forlorn hope. On opening the abdomen the intestines presented and were distended and of a dark purple color. A twist was found in the small intestine. The

coil was very heavy and filled with fluid. Death followed in a very few hours. At the autopsy the next day the intestines were removed *en masse* and were sent to Dr. Fitz for examination. The blood in the mesenteric system was found clotted and at this stage he was undecided whether this was due to a thrombus in the portal system or to volvulus.

In conclusion, Dr. Richardson said that in grave cases of doubt, with symptoms of obstruction, an early operation is advisable. By an exploratory incision much is gained and little is lost.

In discussion Dr. E. N. Whittier said that he had seen the case in consultation. Note how deceptive the case was. At first the man seemed so little sick that he objected to being kept at home in bed. Note also the two semi-liquid discharges which were deceptive. The mass felt was easily moulded and doughy. The twist was in the upper part of the small intestine, and so the tumor was very low down for it.

Dr. H. E. Marion, in whose practice the case occurred, said that it had not been mentioned that there was vomiting of stercoraceous matter, and also that the necrosis affected nearly the whole length of the small intestines.

Dr. F. B. Harrington reported a case of "Removal of a large part of the Frontal Bone for Compound Fracture. Recovery." The patient was a brakeman, æt. 28, who had been struck on the forehead by a bridge. The face was very much swollen and crepitus could be distinctly found over the middle of the forehead. The patient was dull and heavy, but would answer questions. On incision the frontal bone was found in several pieces overlapping one another irregularly, and in all about one-third of the bone was removed, the exact portion being marked out on a skull that was passed around. The dura mater was found to be wounded in one or two places. The wound was packed with iodoform gauze. For a few days he had delirium, but he recovered rapidly and became rational. When discharged there was a slight pulsation over the cicatrix.

N.

Use of the Heel in Walking.

Dear Sir:—Will you permit me to enter my protest against the editorial entitled, "How to Dress and Walk," which appeared in *THE JOURNAL* of the 17th inst.? I will not be so uncharitable as to suppose that there was any intentional misrepresentation of the fair exponent of the Delsartian method of walking. But she certainly performed her task poorly, if the women of the Physical Culture Club failed as completely to understand that method as the editor of *THE JOURNAL* seems to have failed.

I am familiar with the Delsartian teaching on that subject, and I will say that it does not at all

teach one to ignore the use and support of the heel in walking. It does teach, however, and I believe, correctly, that the weight of the body should *not* be thrown upon the heel. I must decidedly disagree with the editorial writer when he asserts that "the heel was made to step on, to bear the *whole weight* of the body at the beginning of the step." The weight of the body at the beginning of the step, is mainly borne on the ball of the *other foot*. The heel of the advancing foot should barely touch the ground before the ball is also brought down, and it is not till after this that the weight of the body should be transferred to that foot, and then the spring for the next step naturally brings the principal weight upon the *ball* of the foot.

Let anyone try to walk across the floor, putting his whole weight upon the heel of the advancing foot, and even if he does not fall over, I think the experiment will convince him that this method of walking is no more physiological than it is Delsartian. The lady to whom reference was made, is a good Delsartian teacher, and she does not, by precept nor by example, *usually* teach her pupils to let their heels fall into "innocuous desuetude." Respectfully yours,

A SISTER.

November 21, 1888.

[The lecture in question was reported in a Chicago paper. The lecturer's remarks on "how to walk" were quoted directly in the paper. The only meaning that could be given the words quoted was, that a person should not step on the heel in walking. It was not intended to say in the editorial article that the walker should rest for a time upon the heel of the advancing foot.]

BOOK REVIEWS.

AN ILLUSTRATED ENCYCLOPÆDIC MEDICAL DICTIONARY.—Being a Dictionary of the Technical Terms used by Writers on Medicine and the Collateral Sciences, in the Latin, English, French and German Languages. By Frank P. Foster, M.D., Editor of the *New York Medical Journal*, with the Collaboration of William C. Ayres, M.D., New Orleans; Edward B. Bronson, M.D., New York; Charles Stedman Bull, M.D., New York; Henry C. Coe, M.D., New York; Andrew F. Currier, M.D., New York; Alexander Duane, M.D., New York; Simon H. Gage, Ithica, N.Y.; Henry J. Garrigues, M.D., New York; Charles B. Kelsey, M.D., New York; Russell H. Nevins, M.D., New York; Burt G. Wilder, M.D., Ithica, N.Y. Vol. I. With Illustrations; 4to, pp. xii, 752. A—Ca. New York: D. Appleton & Co. 1888.

We have, at last, a medical dictionary that will

repay consultation, and never leave the consulter in doubt. For years the tempers of medical men have been sorely tried by the incompleteness of existing dictionaries, by no means complete when they were published, and necessarily more incomplete as each succeeding year added new words or gave new meanings to terms already in use.

There is but one medical dictionary in any way comparable to the one under consideration, and that is the "New Sydenham Society's Lexicon of Medicine and the Allied Sciences," which has two great faults. It includes a great deal that has no bearing upon medicine or the allied sciences, and its orthography, particularly in regard to German and other foreign words, is singularly defective. Obvious errors in other dictionaries are repeated, showing that much has been taken for granted. Every page of Foster's Dictionary shows accurate work in every respect. It contains no unnecessary matter. Voluminous as the work may appear, it is really compact, concise in definition; the definitions are in almost all cases logical definitions, without the patience-trying defining by synonyms.

This is not an English medical dictionary only; it is also a Latin, or a French, or German medical dictionary. For example, in reading a French work we may turn to this dictionary to find the meaning of a French medical word. We can but regret that it is not also an Italian medical dictionary. Under "Auf" we find more than four pages of German words; under "Aus" more than five pages of German words. Under *Acide* we find fourteen pages, averaging almost 200 titles to a page. *Bacillus* takes up nine pages, *bacterium* three pages, *bone* about eight pages. The analyses of the mineral waters are given when mineral springs are named.

As must be apparent, an exhaustive review of a dictionary in a short space is an impossibility; one meets with the same difficulty encountered by the Hibernian, who found that the subject changed too often for him to become deeply interested. The writer is familiar with almost every lexicon that a medical man can use. Foster's Dictionary is far beyond and above all; the whole work shows completeness and faithfulness, and this can be said of no other medical dictionary. No physician's library will be complete until all the volumes of Foster's Dictionary are on its shelves.

MISCELLANEOUS.

ASSOCIATION OF ACTING ASSISTANT SURGEONS, U. S. ARMY.—Those familiar with the army medical history of the frontier for the past twenty or thirty years will readily bear witness to the faithful and intelligent discharge of their duties, by the Acting Assistant Surgeons of the U. S. A. In fort and in camp, on the long overland expedi-

tion, or in the Indian wars, these men have done their duty as faithfully and with the same professional efficacy as if they had been regularly commissioned officers. Indeed, if they have not borne the burden and heat of the day, certainly their honorable records deserve recognition and preservation. An association of past and present Acting Assistant Surgeons of the United States Army has been formed for the purpose of securing, so far as possible, a correct history of those who have served in this capacity, and also for mutual protection and benefit. The Association desires to obtain a complete list of all medical men who have served as Acting Assistant Surgeons, in the United States Army, and, so far as possible, their complete medical history, date and place of birth, date and place of graduation, date of appointment, medical service and stations, list of contributions to medical literature, inventions, etc., date of termination of service, professional positions held in civil life, present residence and address. All information from friends concerning deceased A. A. Surgeons will be gratefully received. All past and present Acting Assistant Surgeons are cordially invited to become members of the Association. The badge of the Association is the Geneva red cross. The enrollment fee is \$1.00. The necessary blanks will be forwarded upon application to

W. THORNTON PARKER, M.D., Recorder A. A. S.,
Newport, R. I.

THE TELEPHONE has been extensively used by physicians in prescribing for their patients, and the story of the doctor who ordered its parents to hold the baby to the 'phone until it coughed and then ordered some medicine for whooping cough is familiar. But a St. Paul doctor will probably not trust this useful invention hereafter. He was requested over the wire to visit a sick child two miles away the other night, and not wanting to go prescribed over the 'phone and went back to bed. On making the call the next day he found the patient doing very well under the care of another doctor, and went back with a change of mind regarding the usefulness of Professor Bell's invention.—*Chicago Herald*.

THE TRI-STATE MEDICAL ASSOCIATION met at Memphis on Nov. 13. The attendance was large, embracing many of the leading physicians of Mississippi, Arkansas and Tennessee. The Association elected the following officers:

President—Dr. S. W. Sanford, Tennessee.
First Vice-President—Dr. J. Y. Murray, Mississippi.
Second Vice-President—Dr. L. L. Battle, Arkansas.
Third Vice-President—Dr. J. A. Battle, Tennessee.
Secretary—Dr. S. A. Rogers, Memphis.
Assistant Secretary—Dr. R. W. Pate, Memphis.
Treasurer—Dr. T. J. Crofford, Tennessee.

THE THIRD ANNUAL STATE SANITARY CONVENTION, under the auspices of the Kansas State Board of Health, will be held in the city of Emporia, Kansas, on Wednesday and Thursday, December 5 and 6, 1888. The first session will commence on Wednesday at 7:30 P.M. An interesting series of papers and discussions are promised. All the sessions are open and free for the public to attend. President, Hon. John R. Wright; Secretaries, J. W. Redden, M.D., of Topeka, and A. M. Hawout, of Emporia.

HEALTH OF CALIFORNIA.—Dr. G. G. Tyrrell, Secretary of the State Board of Health, in his report for October, says: Reports received from seventy-nine localities return the mortality for the month of October as 902 decedents in an estimated population of 726,850, or an annual death-rate of 14.88.

DR. F. H. PAYNE, who has practiced medicine for the last twelve years in Berkeley, Cal., has been appointed Director of Physical Culture at the University of California.

ADULTERATION OF FOOD.—According to a report made by the Dominion analyst, out of 909 food samples analyzed, 25 per cent. were found to be adulterated. Out of 81 samples of baking powder 45 were adulterated with foreign matter; 33 out of 117 samples of coffee were impure. Cream of tartar, bicarbonate of soda, butter, milk, mustard, and spices were largely composed of foreign and deleterious substances. A member of the Dominion parliament, Mr. Cochran, representing East Northumberland, has recently been heavily fined for selling skim milk. The minister of inland revenue states that he is determined to check the production and sale of spurious and adulterated articles of food, and with that object in view is prosecuting the offending parties when their guilt has been discovered.

THE ALBANY HOSPITAL.—From the report made for the year ended October 1, by Treasurer Joseph W. Russell, it is shown that 954 patients, 680 of whom were beneficiaries, were treated in the hospital and 7,421 in the dispensary, and 4,233 gratuitous prescriptions were given out. The expenses were \$28,200. Of this sum \$10,620 was spent for provisions and supplies and over \$3,000 for medicines and medical supplies. The endowment fund was increased during the year by \$11,000, sending it up to \$39,000. The legacies amount to \$11,000, and the year's donations and subscriptions to \$7,000. Because of the extraordinary demand on the institution donations are solicited.

THE NATIONAL COMMISSIONER OF EDUCATION has issued a report upon examinations of pupils for imperfections of eye-sight. Color blindness is more prevalent amongst boys than girls. Of optical affections the highest percentage is found amongst children of Irish, Swedish and German blood. The lowest is amongst those of American, French, Scotch and English extraction.

SMALL-POX PANIC IN SCRANTON.—The breaking out of small-pox at Kingston, Luzerne Co., Pa., has caused a panic through that section, which is in the very heart of the Wyoming coal regions. Close by are the mining towns of Luzerne, Maltby, Laskville, Edwardsville and Plymouth. Kingston lies between these places and Wilkesbarre, the county seat.

TYPHOID FEVER IN AN ORPHAN SCHOOL.—Reports from the Soldiers' Orphan School at McAllisterville, Juniata Co., Pa., confirm the rumor of the ravages of typhoid fever among the pupils of that school. It is known that a number of cases exist, and the number is estimated at from twenty-five to forty.

THE MEDICO-CHIRURGICAL SOCIETY OF THE DISTRICT OF COLUMBIA has elected the following officers for the ensuing year: Robert Reyburn, President; A. Tangusta, first Vice-President; P. P. Werner, second Vice-President; F. J. Shadd, Treasurer; J. R. Francis, Librarian; L. A. Harver, Secretary; and S. R. Watts, Corresponding Secretary.

DR. H. D. SCHMIDT, the distinguished pathologist, for many years connected with the Charity Hospital of New Orleans, died on Nov. 23.

THE NORTH TEXAS MEDICAL ASSOCIATION will meet in Sherman, Texas, Tuesday, Wednesday and Thursday, December 11th, 12th and 13th, 1888.

LOS ANGELES SEWERAGE, it is said, is now receiving the much needed attention of Dr. H. S. Orme, a member of the California State Board of Health.

"THE TONGUE" is the title of a new paper, edited by a New Jersey physician. Of course all the doctors will wish to see it.

DR. PERCIVAL H. FLYNN, of New York, died on Nov. 17 in consequence of an overdose of morphia.

A HOSPITAL FOR CONTAGIOUS DISEASES is to be built at Worcester, Mass.

ST. CLAIR COUNTY, Mich., urged to action by the recent small-pox scare at Sarnia, will build a new pest house.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from November 17, 1888, to November 23, 1888.

Lieut.-Col. Richard H. Alexander, Surgeon, is granted leave of absence for four months, by direction of the Secretary of War, to take effect from the date of his relief from duty as Medical Director Dept. Ariz. by Lieut.-Col. Joseph R. Smith, Surgeon. Par. 11, S. O. 268, A. G. O., Washington, November 16, 1888.

Lieut.-Col. Smith, after being relieved by Lieut.-Col. Alden, will report in person to the commanding officer Dept. of Ariz. for duty as Medical Director of that Department, relieving Lieut.-Col. Richard H. Alexander. Par. 10, S. O. 268, A. G. O., Washington, November 16, 1888.

Surgeon William E. Waters, Vancouver Bks., is granted leave of absence for one month, to take effect on or about the 1st prox., with permission to apply for an extension of one month. Par. 1, S. O. 129, Hdqrs. Dept. of the Columbia, November 9, 1888.

Lieut.-Col. Charles H. Alden, Surgeon, is relieved from further duty at the U. S. Military Academy, West Point, N. Y., and will report in person to the commanding General Dept. of Dakota for duty as Medical Director of that Department, relieving Lieut.-Col. Joseph R. Smith, Surgeon. Par. 10, S. O. 268, A. G. O., Washington, November 16, 1888.

By direction of the Secretary of War, Major Charles Smart, Surgeon, will proceed to Milwaukee, Wis., to represent the Medical Department of the Army at the meeting of the American Public Health Association in that city November 20 to 23, 1888, and upon the adjournment of the Association will return to his proper station. Par. 2, S. O. 268, A. G. O., Washington, November 16, 1888. Capt. Richard C. Newton, Asst. Surgeon, is granted leave of absence for four months, by direction of the Secretary of War. Par. 16, S. O. 272, A. G. O., Washington, November 21, 1888.

By direction of the Secretary of War, the leave of absence granted Capt. Marshall W. Wood, Asst. Surgeon, in S. O. 257, November 3, 1888, from this office, is extended ten days. Par. 12, S. O. 270, A. G. O., Washington, November 19, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 24, 1888.

P. A. Surgeon A. C. Heffinger, ordered to the U. S. Str. "Kearsarge."

Asst. Surgeon Patrick H. Bryant, ordered to the Naval Hospital, Brooklyn, N. Y.

Surgeon Daniel McMurtree, ordered to the U. S. receiving ship "Vermont."

Surgeon M. C. Drennan, detached from "Vermont" and to the "Atlantic."

Surgeon G. F. Winslow, detached from the "Atlantic" and placed on waiting orders.

P. A. Surgeon W. A. McClurg, detached from the "Tallapoosa" and to the "Kearsarge."

Asst. Surgeon L. L. von Wedikind, ordered to the "New Hampshire."

P. A. Surgeon A. C. Heffinger, detached from the "Kearsarge" and to the "Tallapoosa."

Surgeon B. F. Stephenson, detached from Navy Yard, Boston, and to the "Wabash."

Medical Director A. S. Oberly, ordered to the U. S. Str. "Richmond."

Surgeon W. H. Jones, detached from the U. S. Str. "Richmond" and wait orders.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, DECEMBER 8, 1888.

No. 23.

ORIGINAL ARTICLES.

REPORT OF FORTY-EIGHT CASES OF ALEXANDER'S OPERATION.

Read before the Section on Gynecology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY J. H. KELLOGG, M.D.,
OF BATTLE CREEK, MICH.

Since October 29, 1886, I have made the operation of shortening the round ligaments forty-seven (sixty-nine times, Nov. 28, 1888) times. The purpose of this paper is to give a brief summary of the immediate, and so far as determined, the remote results of the operation, some observations respecting the nature and purpose of the round ligaments, a description of a new and simpler mode of operation which overcomes the difficulty of finding the ligaments in certain cases, indications for the operation, and suggestions respecting the after-treatment of cases in which this operation has been performed.

Of this series of cases, the first twelve were reported in a paper presented at the last meeting of this Association. Another report of the first twenty cases of the series was made in a paper read before the Gynecological Section of the International Medical Congress.

The following is a classified statement of the whole series of cases, as regards local conditions for the relief of which the operation was performed :

Retroversion or retroflexion, with prolapse of one or both ovaries, 39 cases.

Complete procidentia, 4 cases.

Prolapse of ovaries, 3 cases.

Anteversión, 1 case.

RESULTS IN 39 CASES OF RETROVERSION AND RETROFLEXION.

Of these cases, nearly one-half of which were operated upon more than one year ago, four have been operated upon within three months, and although they promise exceedingly well, they cannot yet be considered as permanent successes. Of twenty-six of the remaining cases, I will say nothing more than that with one exception the patients are well, that the uterus and ovaries are in normal position, and that the symptoms for

which the operation was performed have disappeared, and show no evidence of returning. In one case the operation is an anatomical success, but the patient still suffers from various local pains, which I believe to be of a neuralgic character. Each of the remaining cases, which were not wholly successful, I will notice in detail, as the unsuccessful cases are those of the greatest interest in the history of any new operation.

Miss B. Condition: sharp, rigid retroflexion, uterus double normal size, cervix just within the ostium vaginae, ovaries enlarged and prolapsed. Operation restored uterus and ovaries to proper position, but the intra-uterine stem occasioned great pain and frequently recurring epileptic seizures, so that it was removed on the third day. Two months after the operation, the uterus was retroflexed, but not so much so as before. The ovaries were out of reach, and the uterus was held well forward. The patient went home without a pessary. Was free from epilepsy for several months. Worked hard in caring for an entire family of sick persons, relapsed, and is now little better than before the operation. I think a posterior colporrhaphy should have been performed, and that the patient should have worn a pessary. This case was the second one operated upon and I had at that time more confidence in the sustaining power of the ligaments than I now have.

Mrs. V. Condition: retroflexion, prolapse of ovaries, and distressing reflex symptoms. The sixth case operated upon. Found ligament upon right side, but failed to draw it out. Closed wound and did not operate upon the other side. Patient is neither better nor worse than before the operation.

Miss L. Retroflexion and ovarian prolapse, the result of subinvolution. Uterus and ovaries restored to good position, but when the patient got upon her feet a small hernia appeared upon the right side. Closed this by a subsequent operation. Patient went home too soon. After a few weeks reported little relief from the operation. Has not been heard from for several months. The ligaments in this case were very small.

Mrs. M. Retroversion and prolapse of ovaries. Ligaments extremely slender. One parted in the attempt to draw it out. A week after the operation, found uterus retroverted. A week later, the

uterus was in normal position. Patient went home soon after the operation. Uterus remained anteverted without artificial support for three months, the patient being well enough to engage in ordinary household duties, and greatly better than before the operation. Allowed the bowels to become very constipated. Strained violently at stool during three or four weeks. Came back for examination. Found uterus partially retroverted. Adjusted a lever pessary, applied electricity daily for three weeks and patient was greatly improved. Uterus remained in position for several hours without artificial support, while before operation the organ became retroverted after replacement as soon as the patient stood upon her feet, unless supported artificially. Patient went home wearing a lever pessary without discomfort, which she could not do before the operation. Considering the disadvantages surrounding this case, I think the operation did fairly well. This was one of the first cases operated upon.

Miss B. Retroversion and prolapse of ovaries. One ovary considerably enlarged. Organs restored to good position by the operation. Patient became homesick and went home soon after the operation. Organs in good position when last seen. Patient not relieved of pain at menstrual period, though pain was less severe than before the operation. Present condition I have been unable to learn.

Miss R. Retroflexion, prolapse, and enlargement of ovaries. Had repeated attacks of cellulitis. Constant ovarian pain. In bed most of time, very weak, anæmic, and suffered extremely at menstrual periods. Ligaments were very slender, and a month after the operation uterus was found slightly retroverted. Ovaries in good position. A lever pessary was placed and worn without discomfort. Since operation patient has had no pain in ovaries, no pain at menstruation, has gained 44 pounds in weight, and is able to walk four miles without inconvenience. She pronounces herself in perfect health, and gives the credit to Alexander's operation. So the case can hardly be regarded as a failure, notwithstanding the inability of the ligaments to hold the uterus in perfect position. I attribute the improved condition of the patient to the restoration of the ovaries to their proper place, which could not have been accomplished in any other way I am acquainted with.

In three other cases I have had a similar experience as regards the failure of the ligaments to hold the uterus perfectly in position. These were all cases of retroflexion, in which the intra-uterine stem gave pain or created so much reflex disturbance as to necessitate its removal. The ovaries were well held up, however, in each of these cases, and serious reflex disturbances, as nausea and vomiting at the menstrual period, or after, disappeared after the operation and have not returned.

A pessary can now be worn without inconvenience, although before it could not be tolerated for twenty-four hours. These cases may fairly be regarded as at least partial successes. In summing up the results of thirty-nine cases of retrodisplacement and ovarian prolapse, I may say that twenty-six were wholly successful, seven were improved, and only two were total failures, four being yet undetermined. I hope to have the opportunity to operate again in one of the cases of complete failure, and believe success may be secured.

RESULTS IN 4 CASES OF PROCIDENTIA.

Mrs. R. Complete procidentia of seven years' standing. I had temporarily relieved the patient three years before by a posterior colporrhaphy, but after a second child-birth, the difficulty returned. Operated October 29, 1886. Found ligaments very slender, but the uterus and ovaries were held well in place. Patient went home in six weeks, against my protest, and in spite of my earnest advice, would not wear a pessary. Remained well, notwithstanding, with uterus in good position, for six months, or so long as she took good care of herself. Then the patient engaged in business which required her to be much upon her feet and the old condition soon gave evidence of returning. The patient now reports herself about as bad as before the operation. The patient should have had the posterior colporrhaphy repeated, should have worn a pessary, and should have remained under medical care for a few months after the operation.

Mrs. N. A case of complete procidentia, enormous rectocele and cystocele. Uterus could not be retained by any sort of pessary except an inflated ball, or a pessary with an external support. Found ligaments large, but could not draw them out more than 2½ inches. Organs seemed to be well held up after operation, and all went well for several weeks, when, in straining at stool, the patient forced out the vaginal walls. The fundus was not tilted backward, but the cervix seemed to slide down under the arch of the pubes. The rectocele and cystocele which formerly existed, were but partially reproduced. I desired to perform a colporrhaphy, but the patient thought she would do well enough without it, since the uterus was held well in place by a small inflated ring pessary. The patient's condition is still about the same. Some slight improvement. Patient does not consider the operation a success though her condition is evidently anatomically better than before.

I believe that both the above cases would have been entirely successful if the proper supplementary operations had been performed. I now refuse to operate in cases of this sort unless the patient will agree that all the operations necessary may be performed.

Two other cases of the same sort operated upon more recently, in which the shortening of the ligament has been supplemented by a thorough colporrhaphy, have yielded most excellent results.

RESULTS IN 3 CASES OF OVARIAN PROLAPSE.

In the first case, Miss M., the uterus and ovaries lay in the hollow of the sacrum. The uterus was sharply anteflexed, various sorts of pessaries had been tried and either could not be worn or did no good. In operating, found the ligaments very slender indeed. One was broken. By the shortening of one ligament the fundus was drawn forward, where it has remained. The patient is relieved to a great degree of the pain which she formerly suffered after menstruation, and can wear a small lever pessary, which affords her great relief from backache and other local discomforts.

In two other cases the uterus was anteflexed, otherwise in good position, but both ovaries were prolapsed. In each case one ovary was much enlarged. The ovaries are now in normal position and no enlargement is perceptible. Tenderness and pain in the ovarian region have disappeared. Two of the three cases may be regarded as completely successful, one partially so.

RESULTS IN A CASE OF ANTEVERSION.

Patient, Miss M., aged 33. Complete anteversion. Lower border of fundus was below the arch of the pubes. Patient suffered all the inconvenience usually accompanying this condition. Operation May 31, 1887. Shortening the ligaments, lifted the uterus backward and upward fully 2 inches, where it has remained since the operation. Patient is wholly relieved and enjoys excellent health. Is a laboring woman and works steadily. Has done so for several months. Enjoys good health in every respect. No pessary or artificial support of any kind has been worn since the operation.

Summing up the results of the whole forty-seven cases, I find as follows :

Complete success in 29 cases.

Improvement in 9 cases.

Failure in 3 cases.

Undetermined, but promising excellent results, 6 cases.

I do not think the operation could fairly be considered at fault in either of the three cases of failure. In one case failure was due to want of skill or experience, or the faulty mode of operation, it being one of my first cases, and the old method being employed. Of the other two cases one was due to neglect of proper after-treatment and overdoing on the part of the patient. In the third case failure was due to want of a colporrhaphy. In at least half of the cases in which only improvement was secured, I am confident that with better after-management much better results might be secured. But that the operation

fails in some cases, even when it is an anatomical success, is not a proper ground for condemnation. The same is true of many other surgical procedures. Leaving the undetermined cases out of consideration, I find the failures to be only 7 per cent., while improved cases are 22 per cent., and complete successes, 71 per cent. of the total number operated upon. This is certainly not a bad showing for a new and yet undeveloped operation.

The general skepticism respecting the value of this operation, will, I think, justify me in introducing a few extracts from letters received from patients in response to a circular letter sent out to those upon whom the operation had been performed from six to eighteen months previously. The following is an abstract from a letter from Miss R., whose case I have put down as only a partial success, as the ovaries could still be felt after the operation, though the uterus was placed in good position :

"I feel that I must write and tell you how perfectly well I am. In fact, all my friends look upon my recovery as almost a miracle. Pains and backaches are things unknown to me now. I walk at least a mile every day, and often three or four, and have gained 46 pounds since the operation. I shall be down in a few weeks for an examination to make sure that I am all right. Must say again, I feel simply 'elegant.'"

[Since this paper was written this patient has called upon me, and upon examination I find both uterus and ovaries maintained in good position without a pessary and the patient enjoying absolutely perfect health. No local tenderness anywhere, so that this case was after all a complete success anatomically as well as therapeutically.]

The following letter from Mrs. D. speaks for itself :

"On the 13th day of April, '87, you performed for me the Alexander operation at the Sanitarium, and now enough time has passed to know something of its effects. My good health is a marvel to both myself and my friends. I am so well, so strong, so happy in my good health ; and my heart is so full of gratitude to you for the good received at your hands. I am growing stronger all the time, thereby proving your words to be true (that I would not feel all the good effects of my operation for a year). My husband thinks that the money spent is the best investment we ever made. This reads something like the testimonials we read in the patent medicine almanacs, but I don't mean it that way, for I do this of my own free will, because I am so thankful for my good health that I must tell you so."

The following letter is from Mrs. M., who had suffered for many years from retroversion, and flexion and prolapses of the ovaries. Operation was performed about six months previous to the date of her letter, written March 18. She still remains in excellent health :

"In answer to your letter of inquiry of March 12, I reply as follows to your questions in the order in which they are asked :

"1. I am well pleased with the results of the operation.

"2. I think I can safely say I am relieved of all the symptoms I suffered before the operation.

"3. I have had no examination by another physician, and have no means of knowing the present position of the organs. I only judge from the health I enjoy that they occupy their proper position.

"4. I do not suffer from any inconvenience which I did not experience before the operation.

"5. I believe the operation has made me a well woman. I have not enjoyed as good health for several years. I am doing the work for my family of seven except the washing and ironing. I feel that I am able to do that also, but my husband thinks I had better wait a while longer.

"I can hardly express the gratitude I feel daily for the benefit I received from the operation."

A few days after the above was written I examined this patient and found her well, with uterus and ovaries in normal position, and in a healthy condition.

In preparing this paper for the press, I am able to report another case which I have had opportunity to examine since the paper was written, the case of Mrs. N., one of the two cases of procidentia which were reported as failures. I found that the uterus was held forward in good position, and that it had never been down since the operation as formerly, although there had been a protrusion of the vaginal walls. This was much better than I expected, as I supposed by reports from the patient that the uterus had fallen down as before. A small hernia which followed the operation, had nearly closed, and the operation could fairly be called at least a partial success. By the aid of a proper colporrhaphy, I feel confident that the success might have been made complete.

I give below a copy of a letter from Dr. Alexander, received since this paper was written. The letter relates to the case of Miss Y., of Liverpool, England, who consulted me for epilepsy and general ill-health. On examination, found retroversion with prolapse of ovaries. As the epileptic seizures occurred most frequently and severely at the menstrual period, and the patient suffered from the usual pains and inconvenience accompanying retroversion and ovarian prolapse, I performed Alexander's operation, hoping that both the local condition and the nervous disorder might be thereby relieved. After returning to her home, the patient consulted Dr. Alexander, who reported as follows :

Liverpool, Eng., May 21, 1888.

Dear Sir: I have just had the opportunity of examining Miss Y., one of the cases upon

which you have performed the operation that goes by my name. It is with extreme pleasure that I can report the uterus and its appendages as perfectly normal in position and character, and an improvement in all the symptoms, as Miss Y. will describe herself. I congratulate you on the success, and I hope the fits will lessen in time also. But these probably depend on menstruation itself. I am very glad to find from your letter, that you are finding the operation to be a boon when performed in suitable cases.

With kind regards,

Yours very sincerely,

W. ALEXANDER.

OBSERVATIONS RESPECTING THE NATURE AND PURPOSE OF THE ROUND LIGAMENTS.

The fact that the round ligaments are usually found in a relaxed condition, having a slack of from one to two inches, has led to the supposition that they have little to do in sustaining the uterus in its normal position in the pelvis. Indeed, the view has been advanced by some gynecologists that the round ligaments are of no value except as the morphological representatives in woman of the analogous structures in the male. Indeed, in a discussion which occurred in the Gynecological Section of the last International Medical Congress, a professor of gynecology from Canada declared that a large number of dissections which he had made, together with his experience with the operation, had convinced him that these structures were wholly absent in one-half of the women of that country. In reply to the assertion respecting the poverty of Canadian women in round ligaments, it is only necessary to state that Dr. Alexander, of Liverpool, who, at last accounts, had performed this operation nearly ninety times, has never once failed to find the ligaments. In the 47 [69] cases in which I have operated, I have failed in only a single instance, one of my earlier cases, in which I operated by the old method, cutting down upon the external ring. I abandoned the case after operating upon the right side, suspecting that my failure was due to inability to cope with peculiar circumstances—which greater experience might enable me to overcome. I am now fully convinced that my suspicions were correct, and that I had the ligament, but failed to draw it out. I hope to have the opportunity sometime of operating upon this patient again.

In two other of my earlier cases, I had the misfortune to break a slender ligament on one side, although in both cases the remaining ligaments were of sufficiently good size to secure a very considerable degree of improvement in the patient's condition.

Omitting from the enumeration the case upon which I operated upon one side, and adding my forty-six cases to those of Dr. Alexander, we

have a series of more than one hundred and twenty-nine cases, in every one of which both ligaments were present. For my own part, I should as soon expect to find about as many women wanting in ears, eyes, or ovaries, as lacking in round ligaments. I am thoroughly satisfied that these organs are among the most important of the sustaining structures of the uterus. Dr. Alexander sagaciously suggests that while the round ligaments are not continuously in action, they serve a most essential purpose in performing for the uterus the same function served a vessel by its "mooring ropes." While not sustaining the weight of the organ, they prevent its making too extensive excursions downward or backward during such acts as coughing, heavy lifting, jumping, straining, micturition, and defecation.

Strong contractions of the diaphragm and abdominal muscles during coughing, straining, and lifting, crowd the uterus downward into the pelvis with very considerable force. I have endeavored to measure this force by means of a mercurial gauge connected with an air pessary placed in the vagina and filled with water, and found it to be equal to one to four inches of mercury, equivalent to one-half to two pounds per square inch. The descent of the uterus, unless it is strongly anteverted, inclines the fundus backward more and more as the uterus descends along the curve of the pelvis. Without the restraining influence of the round ligaments, there is nothing to prevent the uterus from becoming retroverted from very slight causes, so if these structures were not present, we should find retroversion to be the normal condition of the uterus instead of anteversion. The purpose of the round ligaments is not to sustain the uterus, but, acting through the internal abdominal rings as ropes running over pulleys, they prevent the uterus from being forced so far backward as to allow the intestines, which normally lie behind the fundus of the uterus, to crowd in between the uterus and the bladder, thus producing a permanent backward displacement.

This action of the round ligaments I need not dwell upon, as Dr. Alexander has very clearly and forcibly demonstrated the correctness of this view in his monograph upon this operation, but I wish especially to call attention to what I suppose to be a new observation respecting the action of these ligaments. To perform the function of "mooring ropes," the round ligaments need to be nothing more than fibrous cords. This, indeed, seems to be the general opinion respecting their structure. The following observation proves them to be much more than this, namely, active muscular structures; which is exactly what we should expect to find, considering the matter from a theoretical standpoint, since analogy would give to the round ligaments a structure corresponding

to the cremaster muscle of the spermatic cord.

Having entertained some thoughts of this sort, I made the following experiment upon a case: After cutting down upon the round ligament, and carefully freeing it from the surrounding structures, I drew it out to the full extent, so that the fundus of the uterus was brought close up to the anterior abdominal wall. The ligament was sufficiently detached from the structures of the canal to run freely back and forth without tension upon any of the surrounding structures. I then applied electrical stimulus in each of the following ways:

1. The outer end of the round ligaments, after having been separated from its attachment, was held by an assistant 2 or 3 inches from the surface of the body, and in such a manner that it was not put at all upon the stretch. One pole of the battery was connected with a large flat sponge, placed upon the abdomen 4 or 5 inches above the wound. The circuit was closed by touching the ligament with the other electrode, which consisted of a small copper wire with a bit of absorbent cotton wound about the end and moistened. Immediately on making contact with the ligament, a very distinct contraction occurred, which involved not only the abdominal muscles, but the ligament itself. This was shown by the fact that the ligament was not simply drawn into the wound, but shortened during the contraction.

2. With one electrode placed in the vagina the result was the same, only the contraction was restricted more closely to the ligament and the muscles in the immediate vicinity of the ring.

3. To be doubly sure that the contraction of the ligament was not due to the structure being dragged in by contraction of the abdominal muscles, I carefully isolated the ligament from the body for the length of about 4 inches, and then applied the electrical current by making contact at two points upon the ligament itself about 2 inches apart. There was distinct contraction and shortening of the ligament, with contraction of the abdominal muscles.

4. To make the observation still more positive, I cut off about 2 inches of the ligament, laid it upon a warm, moist towel, and applied wire electrodes to either end. The ligament had been exposed to the air for some time, and had been considerably bruised in drawing it out. Still, slight though very distinct contractions were obtained.

5. I afterwards subjected the portion of the ligament removed to microscopical examination, and found imbedded in its structure large bundles of voluntary muscular fibres. I did not have my stage micrometer at hand at the moment of examination but, comparing the width of the fibres with the diameter of the red blood corpuscles by means of a camera lucida, I determined their width to be about $\frac{1}{80}$ of an inch. For some weeks before examination, the structure had been preserved in a bichromate of potash solution.

In making the tests, I employed three forms of electrical current—using a galvanic current of about 6 milliampères, the faradic current, and a reversing current obtained from a small dynamo. Much the most distinct and vigorous contractions were obtained from the last named current. My first purpose, indeed, in making the observation, was to ascertain the influence of this current upon the round ligaments, as I had found it to be a most efficient agent in stimulating muscular action in other parts of the body. I think it may fairly be inferred from the above observation that the round ligaments are active as well as passive in their function. In other words, they not only act merely as tendinous cords to prevent too great displacement of the uterus, but, when made taut by downward or backward displacement of the uterus, they aid in restoring the organ to its normal position by contracting, and thus lifting it forward. Indeed, their action is probably still more positive in the prevention of downward displacement, since the voluntary muscular fibres of the round ligaments contract simultaneously with the abdominal muscles in such actions as coughing, straining and lifting, so that the slack which is found to exist in post-mortem dissections is doubtless taken up, and the top of the fundus tilted forward at the same moment that the downward pressure is brought to bear, thus diverting the current of downward action toward the hollow of the sacrum and behind the uterus. Is it not on account of this beautiful arrangement of reciprocating muscular action that the hardy women among the peasantry of Continental Europe, as well as the female members of most barbarous tribes of human beings, are enabled to compete in physical endurance with men living under similar conditions? Their well developed round ligaments antagonize the displacing influence of other muscles in such a manner as to protect them from the disorders and malpositions of the uterus to which women of feeble muscular development, and consequently with slender and inefficient round ligaments, are so notoriously subject. In the 47 [69] cases upon which I have operated, I have invariably found the round ligaments large and well developed in women who have from early life been accustomed to such active physical exercises as are calculated to produce a good physique and well developed muscular system; while in women whose habits had been habitually sedentary, or who from early life have had their bodily movements so restricted by tight corsets as to prevent freedom of movement in the muscles of the lower part of the body, I have invariably found the ligaments slender and weak.

A SIMPLE AND IMPROVED METHOD OF OPERATION.

In my first twenty-seven cases, the operation was performed by cutting down upon the external ring as described by Dr. Alexander. In the last

twenty cases, adopting Dr. Alexander's more recent suggestion, I made the incision a little higher up, opening the canal at a point about $\frac{1}{2}$ inch above the border of the external ring, by a division of the intercolumnar fascia. I never find it necessary to make the external incision more than an inch in length. After cutting through the skin, I catch up the underlying structures on either side with snap forceps, and divide the tissues with knife or scissors down to the tendon of the external oblique muscle. Placing the end of the left finger in the wound, I locate exactly the external ring, then draw back the sides of the wound with retractors in such a way as to expose the dark line which marks the location of the intercolumnar fascia. A slight incision is made through the fascia, 3 or 4 lines in length. Taking a strabismus hook in each hand, the opening through the fascia is made to gape by drawing one side back with the hook in the left hand, while the round ligament with its investing fascia is hooked up with the right. In order to secure the round ligament, it is only necessary to adopt the following procedure:

Passing the hook down on the outside of the grayish mass which is seen through the opening in the fascia, press this mass a little toward the center of the body and push the hook down to the lower part of the canal, half or three quarters of an inch below the level of the tendon of the external oblique. Turning the point of the hook inward, a mass of tissue is easily secured and brought out through the opening in the fascia, which will usually be recognized at once by its grayish color and the great number of anastomosing blood vessels as the structure containing the ligament. It is of great importance that the wound should be wholly free from blood, and the dissection a clean one, as by this means only will the natural color and appearance of the structures of the ligament be so preserved as to enable one to identify them. The structures hooked up usually consist of the ligament surrounded by a sheath of fascia, with its accompanying nerve and blood-vessels. To make sure that the ligament shall not escape back into the canal, from which it is not always easy to recover it, I slip a thick carbolized silk thread underneath the whole mass by means of an aneurism needle. The ends are tied together or secured by a pair of snap forceps. The next step in the operation is to carefully enucleate the ligament from the membrane surrounding it, which is easily done by the aid of a strabismus hook. On making a longitudinal slit in the fascia, the smooth, glistening surface of the round ligament is usually readily discovered, and the process of enucleation may be completed in a few minutes. In exceptional cases, the ligament, even at this point, proves to be a mere tendinous thread. On this account, great care should be taken not to sacrifice any chance for securing the

ligament by cutting or breaking off any of the fibres which dip down into the canal toward the internal ring. By repeated trials, even in the most unpromising cases, a fibre will at last be found which, when pulled upon, does not drag upon the borders of the ring to which the fascia surrounding the ligament is attached. Drawing this outward, the operator will be gratified by seeing a smooth, glistening cord emerging from the wound in the direction of the internal ring. Carefully seizing this with the thumb and finger, a little steady traction will bring the ligament fully into view. The ligament may now be dropped into the wound, being still secured by the loop of silk. Place in and over the wound a mass of absorbent cotton, saturated with four thousand solution of mercuric bichloride. After securing the ligament upon the opposite side in the same manner, both the ligaments should be drawn out to the extent of three to five inches. The pouch of peritoneum which forms the canal of Nuck will be seen gradually separating from the ligament as it is steadily pulled forward.

The next procedure is the placing of the silver wires, which should be passed through the tendon of the external oblique, crossing the inguinal canal, and including at least one-half the thickness of the round ligament. Special care should be taken to include in the silver sutures the pouch of peritoneum investing the ligament. I have found two silver sutures to be sufficient. The slit in the inter-columnar fascia is now closed by two or three carbolized silk sutures. At least two of these are also made to include the ligament. Before tying the last suture, the outer portion of the ligament is tucked into the outer end of the inguinal canal. If the ligament has been greatly bruised, however, or if vessels have been tied, so that its nutrition is cut off, the ligament should be brought out through the lower angle of the wound. This is very rarely necessary, if the operator is skilful. The deep and superficial fascia are now carefully brought together by a continuous suture of small chromicized catgut. The skin is united in a similar manner, the silver sutures twisted, and the operation is completed.

In dressing the wounds, I cover them thickly with a mixture of equal parts of iodoform and sub-carbonate of bismuth. Over this is placed a quantity of iodoform charpie, then a thick layer of sterilized cotton, and a snug body bandage, secured by perineal bands, is placed over all. The uterus is supported in position by a lever pessary, which is fitted before the operation. If necessary, this is held up by the hand of an assistant, during the securing of the ligaments by sutures. In cases of retroflexion, the fundus must be held forward by means of a sound, and afterwards kept in place by a stem pessary, unless the flexion is a rigid one, in which case rapid dilatation should be performed before the operation upon the liga-

ments, and a stem pessary placed in position. I have had made a self-retaining stem which I find useful in these cases.

I have operated by this method in 20 [42] cases, and have secured immediate union in every case. Great pains is of course taken to make the operation thoroughly antiseptic. The patient receives a shampoo and is shaved some hours before the operation, and a compress wet with one to four thousand bichloride solution is applied to the parts concerned in the operation. All assistants and nurses, as well as the operator, are required to wear, while in the operating room, large gowns which have been well sterilized by boiling or fumigation. The operator and all who handle instruments, disinfect the hands first by thoroughly scrubbing with hot water and laundry soap, then washing with alcohol or ether, and finally soaking for a minute in a $\frac{1}{2}$ per cent. bichloride solution. The wounds are kept continually moistened by frequent sponging during the operation with one to four thousand bichloride solution.

With the exception of one case, 100.6° F. is the highest temperature shown by any case operated upon in this manner, (now twenty in number,) and the temperature has reached 100° F. in only a few instances.

Another advantage of this simple mode of operation is that it can be performed without ether. The incisions are so small, usually only just large enough to admit the end of the finger, that cocaine answers all requirements for anæsthesia. In my last 18 [40] cases, I have used ether but twice. The patients complain of no pain except for a few seconds at the last, when the ligaments are being drawn out. I usually inject fifteen or twenty minims of an 8 per cent. solution of cocaine under the skin along the line of the first incision, four or five minutes before beginning the operation. No more cocaine is required, as a rule, until the deep fascia is reached. A few minims are dropped over the deep tissues before making the last incision. A few minims more are injected into the inguinal canal before picking up the ligament, and again the needle of the syringe is passed into the canal in the direction of the internal ring, just before drawing the ligaments out. The total amount of cocaine used in a case is usually three to five grains.

Another advantage in the use of cocaine is the fact that the patient is not troubled by subsequent vomiting, as when ether is used. The pain occasioned by the pull upon the ligaments in the straining of a single spell of vomiting after ether, is much greater than the entire amount of pain ordinarily suffered during the operation under cocaine. Patients frequently read a newspaper or a book, or converse jovially with friends during the operation, and declare that they should not be aware from the sensation that any operation was being performed. The great safety of this

operation when performed antiseptically, the little pain involved in it, and the elimination of the small danger involved in the use of ether, by the employment of cocaine, certainly commend to the consideration of gynecologists the question whether so safe and simple a procedure is not greatly to be preferred to dependence upon pessaries, which, at the most, are, with rare exceptions, merely palliative, and are not infrequently attended by great distress and inconvenience on the part of the patient who resorts to their use.

After the operation, the patient is put to bed, a vaginal douché is administered every four to six hours during the day, and one during the night if the patient suffers pain. A narcotic is rarely required. The use of a catheter is seldom necessary, as the patient evacuates the bladder without straining while taking the douche. Before the operation, the patient's bowels are thoroughly evacuated by means of an aloine pill given the night before the operation, and a saline laxative the next morning. The bowels do not move after the operation for two or three days, and then are kept loose by castor oil or some similar laxative. Defecation is aided by warm water enemata, so that no straining is allowed. The silver sutures are removed the seventh or eight day, until which time the dressings are not disturbed. I never use drainage tubes, and see no necessity for their use in this operation. The patient is kept in bed for three or four weeks after the operation, receiving daily massage and general faradization.

At the end of one month, the patient is allowed to get upon her feet, and a course of treatment is begun for the purpose of preventing a relapse into the former condition. Alexander's operation is not to be considered as a radical cure of any form of uterine displacement, but only as a most efficient aid to other means. It restores the uterus to its normal position, and gives it, so to speak, a new chance to stay there if it can. Whether or not it will remain in the position to which it has been restored, depends upon whether other normal conditions, causative and resultant, are or may be removed.

When may Alexander's operation be advantageously employed? In answering this question from the results of my own experience, I should say:

1. That the greatest utility of this operation is in cases of retroflexion and retroversion of long standing, and especially cases in which the uterine displacement is accompanied by prolapse of the ovaries, making the wearing of a pessary painful or intolerable. I think it not improper, however, that a woman who is found to be suffering from retroversion or flexion, without any ovarian complication, should be given an opportunity to choose between an operation which restores the uterus to its normal position, and gives it a fair prospect of remaining in this condition, and many

years, or a lifetime, of dependence upon a pessary, and possibly also upon a specialist to inspect, adjust, and change the supporter to suit varying conditions from year to year.

2. Cases of procidentia, provided the operation is supplemented by other necessary operations, as posterior or anterior colporrhaphy, or both. I am satisfied that much of the prejudice against this operation which exists among physicians is the natural result of too great confidence felt in the operation and the extravagant claims made for it by some of those who were among its early advocates. I think it is now pretty well agreed that Alexander's operation affords only a temporary relief to the subject of complete procidentia unless proper supplementary operations are performed. I have devised a modification of the posterior colporrhaphy of Simon which I find very successful in these as well as other cases requiring a posterior colporrhaphy. The operation consists in the removal of a strip of mucous membrane of proper width upon the posterior wall of the vagina, extending from the labia to a point an inch below the level of the cervix, when the latter is held in its normal position. The inner end of the denuded surface is continued laterally on either side by extending the denudation one-third the circumference of the vagina each way from the median line. Beginning at the apex of each of these cornua, the denuded surface is closed up, first by buried sutures, then by a continuous suture uniting the edges of the mucous membrane. By this means, not only is the vagina narrowed, but a thick strong raphe is made running along the posterior wall, forked at its inner end. The forked end forms a pouch into which the cervix drops, and being prevented from further descent, the action is to tilt the fundus forward, thus aiding the action of the round ligaments. An anterior colporrhaphy is also performed when there is much anterior bulging. I find the use of the buried suture of great advantage in this operation as well as the form given the denuded surface. This mode of procedure may be old to others, though new to me. I have taken the liberty to describe it thus briefly in this paper, as I believe a colporrhaphy to be equally as important as Alexander's operation in all cases of procidentia, and also in cases of retroversion attended by vaginal subinvolution; and in the dozen cases in which I have used this method, I have found the results much more satisfactory than other methods which I had previously employed.

The expectation from Alexander's operation is not that the ligaments will permanently hold the uterus up, but that they will hold it forward for a sufficient length of time to allow the pelvic contents to rearrange themselves in normal positions; and if the natural supports of the organ can at the same time be restored, a cure will be accomplished; otherwise the patient will assuredly drift back, in

time, into the old condition. It is not the normal function of the round ligaments or muscles to sustain the uterus; but we have shown by experiment that their strength is amply sufficient to enable them to be used temporarily for this purpose. Nevertheless, no intelligent gynecologist would think of depending upon these frail muscular bands as a permanent support for both the uterus and a large part of the abdominal contents. I speak of this, not for the information of this audience, but as a defense against damaging impressions which I have found existing among physicians that Alexander's operation is claimed by its advocates to be a radical cure for procidentia and all its grave consequences.

3. As at least third in importance, I should rank the utility of this operation in the restoration to proper position of enlarged and prolapsed ovaries, when painful and a cause of serious reflex or local disturbance, irrespective of the position of the uterus itself. In forty-two of the forty-seven cases upon which I have operated, the ovaries have been prolapsed. In fifteen of these cases one or both prolapsed ovaries has been very much enlarged. In two instances the enlarged ovary was as large as a very large egg. In every instance, with barely two exceptions, the prolapsed ovaries have been so perfectly restored that they could not be felt in vaginal examination after the operation. The rescue of this sensitive organ from its perilous position—crowded down behind the uterus, exposed to the pressure of hardened feces and the jar of every misstep in walking, as well as the passive congestion due to the mechanical obstruction to its circulation, and its restoration to its normal and protected position, is in itself the first step, and the most important step, toward the restoration of the ovary to a normal condition in other respects. I am convinced that a very large part of the good results which I have seen from this operation should be attributed to the restoration of the ovaries to their normal position, rather than to the change in the position of the uterus.

The existence of antelexion or anteversion is not a contraindication for the operation, at least in my experience, if needed for the restoration of a prolapsed ovary. I have operated twice in cases in which this condition existed, without in the least degree aggravating the anterior displacement; and although it has been my uniform rule in operating to draw the ligaments out as far as possible without undue force, I have not produced a harmful degree of anteversion in a single instance.

4. I offer, as a fourth indication for this operation, extreme anteversion of the uterus when the patient suffers much from bladder disturbance. The results in the one case of this sort, first reported at the last meeting of this Association, have been all that could be desired, and I see no

reason why equally good results may not be obtained in other cases.

The operator who wishes to succeed with Alexander's operation, must not consider that when the operation is done, every thing has been accomplished. The shortening of the round ligaments should be regarded simply as a procedure for securing conditions favorable for the success of other means of treatment, which, without it, could not be permanently successful. I will briefly summarize what I believe to be the most essential features of the successful after-treatment of cases of this sort:

1. After the operation for the shortening of the ligaments, and the colporrhaphy or perineorrhaphy, or both, in cases requiring these operations, have been performed, a suitable pessary should be worn for six to twelve months, so as to remove all strain from the uterine ligaments and give them an opportunity to shorten, and prevent the round ligaments from being stretched to their original length. In my earlier cases, not appreciating the full value of the pessary in the after-treatment of these cases, I failed to obtain the best results in some cases which I believe would otherwise have been entirely successful.

2. The use of the vaginal douche for several months following the operation, I consider a very important means of aiding the contraction of the uterine ligaments and the return of the uterus and ovaries to their normal condition. Medicated pledgets of cotton may also be advantageously employed in many cases.

3. Another measure which I consider one of the most important of all in securing such a degree of improvement as will insure the patient against a speedy relapse into the former condition, is the correction of faulty modes of dress. It is not simply necessary to discard the corset, as I am satisfied that tight waist-bands and heavy skirts do more harm than do corsets. I have met many cases in which women who had discarded corsets, have injured themselves greatly by wearing numerous heavy skirts, drawn tight, and hanging upon the hips and lower abdomen. Skirt suspenders do not wholly remedy this evil, unless the skirt and dress bands are very loose; and every experienced physician knows that the average woman does not know when her clothing is loose. My rule is to make the patient take a full breath when the skirts and skirt-bands are loosened, take a measurement of the waist while the breath is held, with the lower portion of the chest expanded as much as possible, add one inch to this measurement, and adopt this as the standard measurement for skirt-bands and all clothing about the waist. I have made some measurements of the amount of downward pressure produced by corsets, waists, skirt-bands, and other articles of clothing, and in one instance found the column of mercury raised to twenty

inches during forced inspiration. This means a pressure equal to ten pounds per square inch. With such a pressure as this bearing downward upon the uterus and other pelvic organs, no permanent gain could be hoped for by means of Alexander's or any other operation, unless it be that of attaching the fundus of the uterus to the anterior abdominal wall.

4. Lastly, as another most important means for the prevention of a relapse into old conditions after this operation, may be mentioned electricity and massage, and such special active and passive exercises as will strengthen and develop the abdominal muscles and the normal supports of the uterus and other pelvic viscera. For a dozen years, I have employed electricity extensively in the treatment of uterine displacements of various sorts, sometimes with very satisfactory results, at other times without apparent effect in the direction of the improvement of displacements. Combining this agent with Alexander's operation as a supplementary therapeutic means, affords a more favorable opportunity for good results.

I have employed different forms of currents, the faradic current, the slowly interrupted galvanic current, the galvanic and faradic currents combined, and the dynamic current. The latter current, supplied by a small machine giving a reversing current, I have found the most effective of all means of stimulating contraction in the muscular structures which support the uterus. When one electrode is placed upon the abdomen and the other in the vagina, energetic and painless contractions are produced in the abdominal muscles, the sphincter muscles of the rectum and vagina, and the other muscular structures within the pelvic cavity. Experiments made with this current on a patient under ether and with the round ligaments exposed and isolated, showed contraction of these structures also when the electrodes were applied as indicated. If it be true, as has been suggested, that other of the ligaments of the uterus as well as the round ligaments, are to a considerable degree, muscular in their structure, I deem it wholly probable that these also participate in the contraction. These contractions occur at every reversal of the current, so that this current not only has the effect to stimulate nutritive changes in the diseased structures, but also affords a most valuable means of securing functional activity in idle and relaxed parts, thus giving them the benefit of a genuine gymnastic exercise. The therapeutic results following the use of this current justify me in claiming for it a decided superiority over any other form of electrical current for this purpose. I have used this current for medical purposes for the last five years, and in the after-treatment of cases in which the round ligaments have been shortened during the last year.

Massage, combined with faradic electricity ap-

plied in such a manner as to secure contraction of individual muscles and groups of muscles, is also a measure of great service, not only in securing the general improvement of the patient, but more directly, when localized in its application, as a means of strengthening the abdominal muscles and aiding the readjustment of the abdominal viscera to a normal condition. Massage is also a most potent means of relieving the obstinate constipation with which a large proportion of persons requiring this operation habitually suffer, and which will almost certainly occasion a recurrence of the displacement unless relieved.

Light calisthenics, exercises with Indian clubs and dumb-bells, pulley weights, etc., are of essential service. In fact, a regular systematic course of physical culture, or appropriate gymnasium training, is, in my opinion, necessary to fully insure a woman who has once suffered from uterine displacements from an ultimate recurrence of the condition. These patients often have an original defect in organization, a lack of physical development, or at any rate of a symmetrical development which predisposes them to uterine displacements. A young woman who has failed to develop strong abdominal muscles, who has not been allowed to run, jump and romp, and harden the muscles of the trunk and limbs when a girl, is a candidate for retroversion or flexion, or ovarian prolapse, or some allied malady as soon as she is obliged to endure any sort of physical hardship. This is, in my opinion, the reason why so many young women attribute all their ailments to going up and down stairs at school. I see no reason why a woman may not go up and down stairs as well as a man if her muscles are properly developed. Stanley asserts that the strongest porters in some portions of Africa are women. Inquiry in the hospitals of France, Germany, and Italy convinced me that uterine displacements are much less common among the women of the laboring classes of that country than in this country. If then, we have performed the operation of shortening the ligaments upon a woman whose physical development has been neglected, we must not be content with making her as well as before the displacement occurred; we must make her better than before, or the same morbid conditions will follow the same causes. If, then, instead of sending away a patient upon whom the operation of shortening the ligaments has been performed, with the same weak and unbalanced muscular condition as before, we subject her to a series of carefully graded exercises by which weak parts are strengthened and feeble parts developed, we prepare her to endure without injury those physical hardships, muscular strains, etc., which she must necessarily encounter, and thus insure her against the relapse which otherwise will almost inevitably occur.

Pursuing this plan in the management of cases upon which Alexander's operation has been per-

formed, I am sure that radical cures may be effected in numerous cases which by other means could only be palliated. As an essential aid to curative gynecology, I believe this operation is destined to prove a most valuable addition to this branch of medicine; and I feel confident that its proper employment in conjunction with other measures of treatment, and especially the appropriate after-treatment of cases, will in due time wear away the prejudice which has arisen against the operation through the neglect of the use of the supplementary measures necessary to secure to the patient operated upon the great benefits which might otherwise have been secured.

[Since the above paper was written I have performed the same operation in twenty-two additional cases, making sixty-nine in all. At the present date I find in the total number but four failures, ten much improved, and fifty-five complete successes. Of the last forty cases, there has been failure in but one case, and this was due to an accident in which the patient was led to exert herself so violently just after getting upon her feet subsequent to the operation, that the ligaments were torn loose. The total percentage of successes, including my first series of twenty-nine cases by the old method, is eighty. J. H. K.]

NASO-PHARYNGEAL FIBROMATA.

Read in the Section on Laryngology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY E. FLETCHER INGALS, A.M., M.D.,

PROFESSOR OF LARYNGOLOGY, RUSH MEDICAL COLLEGE; PROFESSOR OF DISEASES OF THE THROAT AND CHEST, WOMAN'S MEDICAL COLLEGE, CHICAGO.

In 1884 I presented to this section a paper on naso-pharyngeal fibromata in which I reported four cases, two of which had been cured, and two of which had disappeared so that the result was unknown. In that paper I advocated the extirpation of these growths, when possible, through the natural passages by means of the galvano-cautery *écraseur* or other methods, employed by laryngologists in the destruction of nasal polypi, in preference to the formidable operation including removal of the superior maxilla, which has frequently been practiced by surgeons, and which is still believed, by some, to be the best means of eradicating these growths.

In a paper by Dr. Lincoln, of New York, to which I referred in my former article, it was shown that the operation usually adopted by surgeons was extremely hazardous—over 25 per cent. dying from the operation, while it was not very successful in preventing recurrence, as in only about 14 per cent. was it certain that the tumor had not returned within a year. By the method which I then recommended it was shown that the danger to life was very much less, and that the ultimate results were much better, as in

over 50 per cent. of the cases recurrence had not taken place within twelve months.

Recently one of the cases then reported, which had failed to return after the first sitting for completion of the operation, and which I had lost sight of at the time my former paper was written, has returned to me after the lapse of five years with a renewed growth in the same locality. This I have removed by means of the galvano-cautery *écraseur* at my clinic at Rush Medical College, in presence of Drs. Hinde and Breckinridge and the medical class. The operation was done after the parts had been anesthetized by cocaine, and was completely successful in the removal of all of the tumor. It consisted of three lobules which had been attached by a base about half an inch in diameter at the vault of the pharynx and posterior naris of the left side. The tumor removed five years ago had the appearance of being composed entirely of fibrous tissue. Of the tumor recently removed the smaller lobule, which measured about five-eighths of an inch in diameter, proved upon microscopic examination, made in the Physiological Laboratory of Rush Medical College, to be made up of fibrous and cellular elements, being about four-fifths fibrous.¹ The next larger lobule which measured about three-eighths inch in diameter by one and a half inch in length, appeared to be fibro-cellular in character about one-half fibrous, and the largest which measured about one by two inches in diameter, seemed also fibro-cellular, about three-fourths fibrous. This case was at first reported as fibrous, and I believe that the tumor first removed fully justified placing it in that class, though the recent growths contain more of the cellular elements than is usual in the true fibromas. In this case there has been a recurrence of the growth as I had expected, because it was not entirely removed at first, the patient having failed to present herself for the second operation; but its slow growth, and the fact that these tumors are less likely to recur at this patient's age than in subjects at about the age of puberty, leads me to hope that the recent operation may prove the last one necessary.

I have also to present to the Section the history of a case from which I recently removed a large fibrous growth from the naso-pharynx with the galvano-cautery.

The patient, W. K., *æt.* 16, was brought to me by Dr. White, of Sandwich, Ill. I found that for two years he had been troubled with difficulty in breathing through the nose, and frequent epistaxis. For about two months before consulting me he had suffered from frequent alarming hemorrhages, during one of which Dr. White had been called in for the first time. The doctor checked the hemorrhage, but the patient was much exsanguinated and in no condition for an

¹ This was examined by Mr. Frank Lyman, 1st assistant in the physiological laboratory.

immediate operation, therefore, he was placed on tonics and nutritious food and given time to recuperate. As a result I found the patient well nourished and with no appearance of anæmia. His voice was of that peculiar character known as nasal, the sense of smell was nearly lost, and he complained of pain in the side and back of the head. The left cheek over the lower maxilla was quite prominent, and apparently swollen, but there was no induration excepting just opposite the posterior molar of the upper jaw, where a conical tumor could be felt deep in the soft tissues. This tumor appeared to be about five-eighths of an inch in diameter, at the farthest point where it could be felt, which was about the same distance back of its apex, and it was evidently attached far back in the tissues, out of reach. Upon examining the nares anteriorly, I found the posterior third of the left cavity filled with a firm growth of a light pink color, which bled very easily on being touched with a probe. Examining the mouth I found the soft palate crowded downward, and upon a rhinoscopic examination discovered the naso-pharyngeal cavity to be filled with a tumor of a light red color, and smooth surface, which was found to be hard to the touch. The slow progress of this case, the frequent attacks of epistaxis, and the appearance of the growth itself, convinced me that it was a fibroma. I recommended removal by the galvano-cautery *écraseur*, and left the patient to decide whether it should be done under the influence of cocaine or ether. I much preferred the former, knowing that with it, I would have a much better view of my work, yet I feared from experience with other cases that he might suffer considerable pain. Being anxious to return to his home as soon as possible, he decided to submit to the operation with only such relief from pain as could be afforded by cocaine. On the afternoon of the same day I operated, with the assistance of Drs. J. E. Rhodes and White and Mr. J. A. Bauchman. A 10 per cent. solution of cocaine was first applied to the naso-pharynx and left naris by means of an atomizer and syringe about once in two minutes, for fifteen minutes, until the parts were benumbed. I then passed through the left naris two catheters which were brought out of the mouth and through them passed the two ends of a No. 8 platinum wire. As these were drawn out the nostril with the catheter the loop was carried up behind the tumor by the finger. The ends of the wire were then passed through a tubular electrode, made fast to a ratchet on the handle, and the battery was connected. I then tightened the loop by turning the ratchet, and heated the wire for two or three seconds by closing the circuit, then allowed the patient to rest a few seconds, and then repeated the procedure, thus alternately heating the wire as long as the patient could easily bear it, and then allowing it to cool

and tightening the ratchet. I soon burned off the growth, at its base, which was more than an inch in diameter.

The tumor was removed through the mouth and proved to be a fibrous growth measuring $1\frac{3}{4}$ by 2 inches in diameter, and 1 inch in thickness.

The operation had been easily borne, though it would have caused much pain if I had kept the wire constantly hot until the base of the tumor had been severed. Thus far there had been no bleeding. I then found that a portion of the growth still remained in the posterior part of the left naris. I could not engage it in a snare and therefore attempted to remove it with cutting forceps, but immediately profuse hemorrhage occurred, and I was obliged to plug the nose with a strip of gauze saturated with a thick mixture of tannic acid. This checked the bleeding promptly, but the patient had lost about a pint of blood in five minutes, and therefore further operations were deferred. The patient returned to his home the same day and no unfavorable symptoms recurred. Three weeks later he came to me again. The tumor within the nares had somewhat increased in size and was then found to be of such a shape that it could not be engaged in the snare, therefore I adopted a method which had been successfully employed in a few cases of this kind. I applied cocaine to the tumor in the nares, then introduced into it an electrolysis needle which I connected with the negative pole of a galvanic battery, applying the positive pole at the same time by means of a large flat sponge to the angle of the jaw and side of the neck. I turned on as many cells as the patient could tolerate and continued the electrolysis for fifteen minutes. Ten days later the patient returned and I found that the electrolysis had very materially reduced the size of the tumor, but at this visit I was able to remove a mass about half an inch in diameter with the galvano-cautery snare, therefore did not use electrolysis. Two weeks later I found that the small tumor in the cheek was reduced to one-fourth its former size. I again used the galvano-cautery snare, and removed a small portion of the tumor, and at the same time seared the surface of what remained in the naris. I was unable to remove enough of the growth to allow of free nasal respiration. About two weeks later the patient again returned. At this time I was unable to feel anything of the tumor in the cheek, and all the growth appeared to have been removed from the naso-pharynx, excepting a small mass at the opening of the left naris. The patient could breathe through the left naris considerably, but still a portion of the tumor obstructed its posterior part. I again practiced electrolysis. Ten days later the patient returned having progressed favorably. He was able to breathe through the left naris much better than formerly. Used electrolysis again.

During the past three years I have operated on two other cases of naso-pharyngeal tumors which appeared at first to be simple fibromas. The first case, A. P., æt. 13, was brought to me from Dakota, and during the course of a year and a half underwent three distinct operations, in each of which the tumor was removed as thoroughly as possible, but a portion of it which had become involved in the tissues about the pterygoid process of the sphenoid and a portion which passed into the cheek, could not be extirpated. The late Prof. Moses Gunn at one time removed the tumor from this patient's cheek; the tumor was about an inch in diameter. During the last six months of the treatment the naso-pharyngeal tumor grew so slowly that I hoped for its complete destruction, but the boy, who was in the city without friends, fell into bad company, and I felt compelled to send him home while a small portion of the growth remained. I have not since heard of the case.

The second of these cases, E. I., aged about thirteen, was brought to me from Nebraska about two and a half years ago, with a fibrous tumor which filled the left naris and naso-pharyngeal cavity. In this case the tumor was removed, partly by the galvanic cauter and the steel wire écraseur and partly by cutting forceps. There was profuse bleeding whenever the cutting forceps were used, but it was readily checked by plugging the nasal and naso-pharyngeal cavities with a strip of gauze saturated with a mixture of tannic and gallic acids which had been rubbed up with just enough water to make it the consistency of syrup. The record of the case has been lost, but I recollect that three or four operations were done at intervals of from three to five months. Each time the growth being removed as completely as possible, though a small portion of it was doubtless left in the tissues about the pterygoid process. The last operation was done about a year ago, and I have not since heard directly from the patient whose residence I do not know. But from another patient who knew of the case, I heard recently that the boy is living and that so far as the friends can tell the growth had not returned. Though I am not certain of the result in either of these cases, I believe that it promised to be better than could have been expected from a more formidable operation.

These cases I have reported merely as an addition to the literature of this interesting subject, and with the hope of eliciting discussion which may be of much value. In the present state of our science, I believe that all of these cases which afford any reasonable hope of cure should be operated upon through the natural passages. When the tumor has been removed, if any parts remain which are inaccessible to the écraseur, cauter knife or cutting forceps, they should be treated by electrolysis, and thus even if we fail to

at once eradicate the growth we may hope to prolong the history of the case to the period of adolescence, at which time nature seems to set a limit, at least in many cases, to the further development of these growths, and then a cure may be effected.

70 State Street, Chicago.

FŒTICIDE AND ITS PREVENTION.

Read in the Section on Medical Jurisprudence, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY H. C. MARKHAM, M.D.,
OF INDEPENDENCE, IOWA.

In approaching the consideration of the subject of fœticide we are at the outset confronted by two facts, both of which possess an important significance. We first note that the highest crime—from some standpoints at least—of which criminal humanity is capable, and whose prevalence doubtless exceeds the highest estimate, is of no more judicial importance, in either treatise or statute, than when the evil was scarcely known, and motherhood was everywhere the crowning glory of woman. The second fact is little less an anomaly: that in the presence and despite the elevation, culture, refinement and, more than all else, the religious training and influences operating upon and in modern social life, that in the class of society making in all these respects the highest claims, this vice has developed, the enormity and extent of which is but feebly recognized outside the medical profession.

As aiding our purpose, which is that of endeavoring to discover remedies for the repression, if not suppression, of the crime of offspring murder, it may be useful to attempt an explanation of the causes whose operation has given this crime its peculiar status or, it may be said, have prevented its having any proper legal status in the calendar of capital crimes. So intimately blended and associated are the moral, judicial and medical phases of fœticide, that its relegation to the especial realm of either the law, the church, or medicine, has never been satisfactorily agreed upon. As neither profession has felt the obligation or responsibility concerning the evil which otherwise would exist, the evil, therefore, has naturally failed to receive in any proper degree an adequate consideration. To the moralist and jurist it presents a barrier of delicacy whose sacred realm they instinctively shrink from invading. The resistless power, also, of social pride and ambition would seem to leave little hope of reform through moral agencies. The highest level of ethical profession, in the geography of the modern social world, is honeycombed by this lurking and hideous evil. The conditions insuring perfect concealment and the absolute certainty of the ignorance of the public as to its commission impart characteristics both unique and formidable to the crime. Fœticide is

also the one great crime in which the chief victim, or sufferer, is wholly defenseless and without hope of an advocate. The type of unresisting innocence, it possesses no posthumous resources whose magic wand may set in relentless pursuit of the guilty the instruments of justice.

The champions of the temperance cause, in order to enforce and prove their claims, have only to point to the living victims of dissipation. Those espousing the cause of social purity easily refer to living illustrations of the evils they seek to remove. Statistics are the weapons most feared by the foes of public good. But fœticide enjoys immunity from all these methods of attack. As this important subject is, for inherent reasons, unsuited for judicial investigation, and successfully opposes religious influences, the obligation necessarily rests upon the medical profession to propose a method for checking the fearful progress of the evil. It scarcely subserves the purposes of this paper to attempt a delineation of the diabolical attributes and features of the crime from a moral standpoint, or to essay a medical statement and description of results, both pathological and physiological, of its committal. Neither is it essential, however *apropos* it may be to the discussion, to note its social relations; how the resistless lust for fashionable dissipation and distinction has rendered barrenness essential to their gratification. The limitations of time compel here an omission of these phases of the subject, however much they deserve that attention hitherto unreceived.

Judicially viewed, fœticide has characteristics and relations which render its treatment not only delicate but difficult. Of no other crime is it true that in nearly every instance of its commission there exists ample and unimpeachable evidence of the same, which evidence is also both vital and unavailable. Until a change occurs as to the application of professional rules and tenets in giving evidence in this class of cases, there is little ground for expecting success in the prosecution of the same. Refusing to be used as witnesses to aid the State in punishing those guilty is in contravention of the chief mission of medical science, which is no less than the removal of the causes of physical degeneracy and vice. The position of medical men as witnesses in cases of fœticide is for this reason exceptional, not compelling him, as in other cases, to defend the precepts of his profession and the rights of his patients by refusing to disclose the secrets and confidence of the latter.

Fœticide no more entitles the patient to this secrecy and confidence than does small-pox or other danger to the public, the stamping out of which is the duty of medicine to perform—*per contra*, it as greatly obligates the disclosure of the same. Is it not to be feared that the assurance of medical aid and confidence if danger follows operates as a strong incentive to attempt the performance of the crime upon themselves by those de-

siring it—a practice which the profession well knows is rapidly increasing. Probably no fact is indirectly more promotive of fœticide than the absence of laws regulating medical practice; thereby enabling abortionists, disguised as members of an honorable profession, to pursue their nefarious avocation with comparative impunity. Nothing less than adultery itself can exceed the wrong inflicted upon the husband who suffers wilful betrayal of his hopes and expectations of offspring. If congenital, and hence irresponsible physical procreative incompetency is adequate cause for legal dissolution of marital relations, how much more—measured by every possible standard—is the intentional procurement of the misfortune. Added to this loss is the keenness of disappointment which near realization tends to induce. Medical men will verify this as being no fancy or rare event, as too frequently, when called to rescue the victim from her self-induced peril, has it been a duty to impart to the anxious husband the cause of the danger and the first knowledge of his already severe loss.

Fœticide as a ground for divorce of either party to the marriage contract; whether it result from guilt of the wife, on the one hand, against the wishes of the husband, or whether the husband compels the unwilling submission of the wife to its procurement, upon the other, is, in either instance, both just and practical. Penalties aimed at "abortionists" as a class of criminals are little less than valueless. The party inciting the act—its actual principal—must be made to fear the consequences. The question is worthy the most serious consideration, whether the present facilities, and the alarming extent of their improvement, for disseminating criminal knowledge of the practice, does not remove the usual objections to a popular presentation of the evil as such. That once thought unsuitable for general publicity, is now sown widely by the vultures who fatten upon the harvests.

Our young men are properly taught the evil effects of alcoholic excess—why should not young women be warned of the nature and results of fœticide? There can be, from thoughtful students of the subject, only an affirmative reply. The task of the performance of this duty rests upon the medical profession, and every prompting of interest in the welfare of our race induces the hope that medicine may not betray the trust.

Independence, Ia., April 23, 1888.

THE ARNOT-OGDEN MEMORIAL HOSPITAL, of Elmira, N. Y., the gift of Mrs. Ogden to the city of Elmira, will be completed, at a cost of about \$100,000. The buildings are of brick, and it is said that the most approved methods of sanitary engineering have been employed.

PSEUDO-HYPERTROPHIC MUSCULAR PARALYSIS.

Read before the Indiana State Medical Society, June, 1888.

BY W. BYFORD RYAN, M.D.,
OF WILLOW BRANCH, IND.

I have the honor to present for your inspection three persons afflicted with this rare and imperfectly known disease.

The disease was first described by Sir Charles Bell in 1830; by two Italians, Coste and Gioja in 1838; by Meryon in 1851. The disease did not, however, receive much attention until Duchenne (of Boulogne) reported his collection of thirteen cases in 1868. The same year Dr. Meredith Clymer described the disease under the title "Progressive Myo-Sclerotic Paralysis," though he had not probably at that time seen a case. Dr. Clymer seems inclined to attribute the honor of discovery and first description of the disease to Dr. Edward Meryon, whose paper "On Granular and Fatty Degeneration of the Voluntary Muscles" was read December 9, 1851, and published in the *Medico-Chirurgical Transactions*, Vol. xxxv, 1852.

"Dr. Duchenne (de Boulogne), scouts the idea of Dr. Meryon having first described this affection (*la priorité de la découverte*). 'L'honneur de cette découverte appartient tout entière à la France' (that is, to himself). In the same paper he says: 'La découverte de la paralysie pseudo-hypertrophique remonte à l'année, 1858,' the year he observed his first case. Thus, by his own dates he admits Meryon's priority in description.

Up to 1867 there were less than fifty recorded cases in the Old World and none on this side of the Atlantic. Subsequently Ingall and Webber, Pepper, Weir Mitchell, Hamilton, and others have reported cases. More recently Gowers, in a clinical lecture in London, 1879, carefully reviewed the cases of English, Continental and American writers and compiled reports of one hundred and seventy-six cases. Of these all but eight were children. This seems to be the entire number on record to that date. I add four cases, three children and one adult.

It is not my purpose to enter into a verbose description of the disease, for excellent descriptions may be found in Clymer's Appendix to Aitken's *Science and Practice of Medicine*; in Ross's *Diseases of the Nervous System*; Pepper's and A. McL. Hamilton's works. Neither shall I attempt to solve the problem relative to the primary seat of the lesion, whether it be the muscles themselves, the anterior columns of the cord, or the anterior roots of the spinal nerves; but I shall confine myself to the history of the cases before us, presenting to you the characteristic appearance, attitude and pathognomonic actions of persons so afflicted, in a manner so definite that those

who see need have no difficulty in recognizing the disease if so unfortunate as to meet it in practice.

Dr. Duchenne details the symptoms of the disease in the following order:

1. In the beginning feebleness of the lower limbs.
2. Lateral balancing of the trunk and widening of the legs during walking.
3. A peculiar curvature of the spine or saddle-back in walking and standing (I may add in sitting).
4. Talipes equinus with an over-extension of the first phalanges of the toes.
5. Apparent hypertrophy of muscles.
6. Stationary condition.
7. Generalization and aggravation of the paralysis.

These are the striking features of the disease as I have observed it; and I may add the 8th, which is not, however, characteristic, atrophy of affected muscles.

The family to which these boys belong consisted of four boys and one girl. The eldest son, whom we have before us, is seventeen years old.



No. 1. Walter.

He began to walk at fifteen months, was always awkward, and kept a very unstable equilibrium. He received many falls which an active child would have escaped, and many reprimands from his parents for being "lubberly" and inattentive, before they realized that all this came of weakness and partial paralysis.

His general health has always been excellent. Has never had pain in affected muscles, febrile symptoms, convulsions, or any prodromata. He was a well-formed child, and the hypertrophy of his calves was marked by all observers, and, to his friends, added to the symmetry of his limbs. His appetite was unusually keen, even for a growing boy, and, though vast quantities of excellent food and almost an equal amount of condiments and other "trash" was consumed between meals,

his digestion never seemed to suffer. He was a gourmand, and still has an excellent appetite.

At nine years the sacro-lumbar curvature was very marked. This attitude is assumed because of weakness of the dorsal muscles and is essential to the maintenance of the erect posture.

The increasing cordosis led the family to call a prominent physician, a member of this Society, residing in an adjoining county, to consult with the gentleman who, up to this time, had been the family physician. I do not know what was the diagnosis. A plaster jacket was proposed, but for some reason never applied. Treatment of beef, wine and iron, and of hypophosphites of lime and soda was given and persisted in for six months. No improvement followed, but, on the contrary, the disease progressed.

The patient, discouraged and disgusted with treatment of any kind, came under my care. After careful study, I diagnosed pseudo-hypertrophic muscular paralysis, and gave an unfavorable prognosis. At this time I had seen no literature on the subject except Dr. Clymer's article in Aitken's Practice.

Strictest regimen and a large curtailment of the bill of fare was enjoined. An effort was made to tone the nervous system by the administration of bark, iron and strychnia; but Fowler's solution and regimen were the means in which I had most faith. Having no battery at hand, faradization was not tried. The patient made some improvement. He was able to ascend two or three steps; could stoop and again assume the erect posture by simply placing one hand upon the knee instead of climbing with the hands up the legs as you see Herbert, his younger brother, do. (See cut No. 2.)

The restrictions as to diet were disregarded, because the boy's insatiable appetite could not be curbed by indulgent parents and good-natured servants. The patient petulantly protested against taking remedial agents, and the parents yielding to him, treatment was discontinued after less than two months' trial. At this time the boy, now near ten years old weighed 120 pounds. Within three months of the time he came under my care he was sent, against my protest, to the Surgical Institute in this city, where he was put upon the rack and his enfeebled muscles exhausted by enforced exercise. A brace was strapped upon him for the correction of the spinal curvature which is, as before stated, voluntarily or intuitively assumed as a compensatory relief of the enfeebled dorsal and lumbar muscles. After spending near six months in the institute, he returned to his home almost deprived of the power of locomotion, and within a few weeks he took to his chair, from which he has not arisen unaided since. He has been unable to walk or even to stand since he was eleven years old. At thirteen years he weighed 140 pounds, but since that time he has lost by

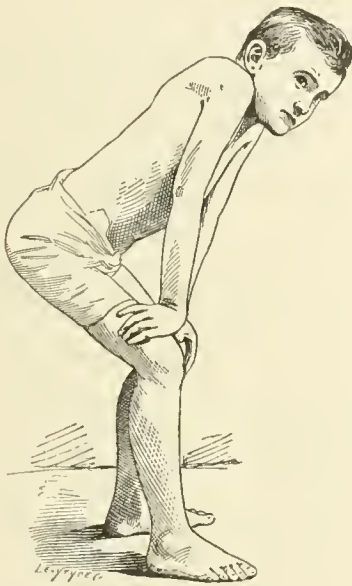
atrophy what he had gained by hypertrophy. The gastrocnemii are in permanent contraction. The disease has progressed very slowly since he took to his chair. He has not been treated for this affection since his return from the institute in this city. The muscles of the arms, back and shoulders are atrophied and powerless; but he derives much comfort and some profit from the use of the muscles of the forearm and hand, which are still subject to his will and retain a degree of force. The grasp is feeble yet he writes a beautiful, uniform hand. The abdominal, intercostal and sphincter muscles, and those of the face, throat and diaphragm seem to be intact. His mind is clear, memory good. He stands fair in his classes at school and, though not unusually quick, he is, in mathematics, rather better than most of his associates in this department. He expresses an earnest desire to have the progress of the disease arrested at this stage, and says that if he could remain as he is life would be enjoyable rather than burdensome to him.

The second son of this family never had any perceptible symptoms of this disease. He began to walk at twenty-one months; was intellectually clear though not brilliant; was peculiarly reticent and old in his ways though active in movement. He had a severe attack of rheumatism, which came upon him suddenly, making him helpless, one day at school. Whether this attack meant anything more than rheumatism I cannot say; yet, in the light of subsequent developments in this family, the presumption is strong that the disease under discussion entered as an important element. Urinary tests, however, and the usual treatment demonstrated the correctness of the diagnosis of rheumatism. There were cardiac complications. His chest was his vulnerable point in the opinion of his parents and former physician, and I acquiesced in that opinion long before this illness. When the more violent symptoms of rheumatism subsided a pulmonary trouble, which I then regarded as tuberculosis, terminated his life at the age of nine years. I have since thought that the lung affection would not so soon have carried him off had not paralysis of the diaphragm entered as a factor; but this is an afterthought and somewhat in the nature of speculation.

The third child, a blooming girl of ten years, is sprightly, healthy and mentally bright. I have no fears of her being affected, with this disease for the reasons that there are no indications of it, and the disease is almost, if not entirely confined to the male sex. Yet it is more than probable that she will transmit the disease, as the transmission has, hitherto, always been through the maternal ancestors.

The fourth child, a son, Herbert T., is before you. (See fig. 2.) He walked at thirteen months.

It is needless to say that he is progressing more rapidly in his decline with this terrible malady than did his elder brother. He is eight years old. You observe the attitude he is compelled to assume in order to maintain his equilibrium, and his shambling gait, peculiar in the pitching the feet forward with the toes lower than the heels, the latter being the beginning of an equinism produced by permanent shortening of the gastrocnemii and paralysis of the extensors. Your attention is invited to the size of his calves and to their firmness to the touch; myo-sclerotic paralysis is not a misnomer. Observe that the muscles of the thighs, arms and back are beginning to atrophy. This boy, aside from this disease, has always had excellent health, a sharp appetite and a good digestion.



No. 2. Herbert.

I desire to call your attention to his method of arising from the sitting or stooping posture. (See cut 2.) He will not permit one to lift him into the standing position, for the reason that he would fall forward if deprived of support before he was able to curve his spine into the peculiar saddle-back pose, with abdomen thrown forward and shoulders back. In order to attain the position given in cut No. 2, arising from the ground, he first gets upon hands and knees, then grasps his ankles, then climbs his legs with his hands. Having attained the position given in the cut the next act is to extend the knees, which is effected by bending forward and downward, so as to cast the center of gravity in front of the knees, the weight acting as the power at the hip joint, extending the knees without the use of the quadriceps extensor. To extend the hip joints the patient works his way up the thighs, placing his

hands higher and higher until the erect posture is attained, the shoulders are cast back till the arms swing so far back that the hands drop back of the pelvis. This behavior in arising from the ground is striking and pathognomonic. Sir Charles Bell recognized it and declared that it is met in no other disease. Gowers and Hamilton are of the same opinion.

The youngest child, who is before you, a boy named Raymond T., is 3 years old. Has been healthy in the main. Had an attack of pneumonia last winter attended with great cerebral disturbance but no convulsions. He is clumsy, maintains the attitude of his brother Herbert in a less pronounced degree, and evidently will follow the pathway of his brothers, unless haply something can be done to avert this calamity.

The heads of these three boys are unusually large.

The eldest, Walter, æt. 17 years, circumference of head $23\frac{1}{2}$ inches.

The third son, Herbert, æt. 8, circumference of head $21\frac{1}{8}$ inches.

The youngest, Raymond, æt. 3 years, circumference of head $21\frac{1}{2}$ inches.

So far as I have been able to learn there is no history of pseudo-hypertrophic muscular paralysis in the family of the mother of our patients. Her mother, who is still living and active, is now 70 years of age.

The paternal grandfather, æt. 76, is, undoubtedly, a subject of the disease, though he vindictively repudiates such an intimation, and, while he acknowledges that his back is weak and his arms and shoulders are not what they ought to be, he attributes his weakness and awkwardness to age, the effect of erysipelas and a fall received many years ago. From the best information I can get, the disease began to show itself in him after a traumatic lesion, and has progressed very slowly, though I cannot bring myself to believe that the disease originated in the traumatism, received after the age of 50. I regard the traumatism as the means of arousing the latent disease. About a month ago the old gentleman, after a ride of 22 miles, sat down to a very late dinner, and on attempting to arise from his chair, fell heavily to the floor, and was unable to arise for nearly one-half hour, declining help. This fall was followed by some fever and considerable mental agitation, a kind of talkative delirium for two or three days, after which he was, and is, as well in every respect as usual. The muscles of his back, thighs and arms are considerably atrophied, yet he is by no means so disabled as either of the grandsons shown you to-day.

There are two things unique in this case:

1. Development of the disease at an advanced age of perhaps 50 years.
2. Hereditary transmission through a son. Hitherto it has been only on the mother's side

that the hereditary influence has been transmitted, while the disease develops almost invariably in males. Several brothers of the old gentleman died of phthisis pulmonalis; one died of some renal disease, probably diabetes mellitus, one sister had a slight paralytic seizure, but is fully recovered. All his brothers and sisters have lived to advanced age save one.

The boys shown you to-day have two uncles and an aunt on the father's side who are married and have children; but as yet none of these cousins, six in number, four males and two females, have shown symptoms of this disease, though two are fathers and two others have reached puberty. In conclusion, I ought to say, that there is not a male member of the grandfather's family or of his nephew's, with whom I am acquainted, whom I would regard as an active man, though they are energetic and of average strength.

HYSTERIA OF A GRAVE FORM IN THREE SUCCESSIVE PREGNANCIES. CASE.

Read before the Medical Society of the District of Columbia, June 6, 1888.

BY ERNEST F. KING, A.M., M.D.,
OF WASHINGTON, D. C.

On Sunday, December 20, 1885, I was sent for to see Mrs. X., æt. 19, then in the fourth month of her first pregnancy. I found her having sharp uterine pains every ten to fifteen minutes. She had been, as she declared, "unusually well" during the previous months, and could assign no cause for the threatened mischief. Upon the administration of opiates the pains ceased and there was no further trouble for about three weeks. At this time a train of symptoms began which continued throughout the pregnancy. Mrs. X. went to bed, refused food, seemingly did not recognize any of the family, threw herself from side to side, moaning constantly—in short, went through every manœuvre that an hysterical brain could contrive. This would continue for four or five days, and would be followed by an interval of about the same duration when the patient would appear like herself. Every expedient suggested for such cases was made trial of, but without permanent benefit. Tonics were administered throughout.

On Friday, June 4, labor began. The day before violent motions of the child were felt, which suddenly stopped. The os dilated slowly, the pains were infrequent and short. Sunday morning, the patient beginning to become exhausted, I applied the forceps and delivered a well-formed dead child. The mother almost immediately became as a different person. Within a week her form rounded out, color returned to her cheeks, and she declared that she "never felt better."

I saw Mrs. X. at intervals during the months following, and some time in November learned

that she was again pregnant. She experienced no discomfort and appeared as usual. On February 15, 1887, she went down town on a shopping expedition, and while lunching at a restaurant felt a sharp pain. She walked to her home, some nine blocks, and went to bed. I saw her within an hour after her return and found her having pains regularly. A foot protruded from the uterus, and in a short time the labor was completed. There were no unfavorable symptoms, and the following day a desire was expressed to go back and finish the lunch.

Both Mrs. X. and her husband were greatly disappointed at the result of these pregnancies, having experienced much pleasure in the anticipation of offspring. In April I learned that the third pregnancy dated from the first of March. On July 7 Mrs. X. came to my office complaining of slight pains at long intervals. I advised rest in bed and, when afterwards the pains increased in frequency, I ordered full doses of opium, which effectually controlled the difficulty. At this time began again the train of symptoms observed during the first pregnancy. There would be periods, lasting for days, of hysterical manifestations with intervals of quiet. There was a constant change of symptoms. No two attacks were exactly alike, though there were points of resemblance, such as taking no notice of what went on in the room, refusing to answer questions, complaining of her head, and refusing to touch food. However, food left in the room frequently disappeared.

Once there was complaint of numbness in one arm and inability to use the same. She was seen through a partially opened door to be fanning herself, using the paralyzed arm, but at the noise made in opening the door the arm dropped as though powerless. In October came a new trouble. Every few minutes the diaphragm would violently contract three or four times. Mrs. X. declared that the motions were those of the child. Aside from these movements she appeared natural. At this time Dr. Jos. Taber Johnson saw her with me.

In November there were two periods when she became violent and I feared she would harm herself or the child. She passed safely through these, however, and on December 5, 1887, she was safely delivered of a well developed male child. With the same elasticity before displayed she was immediately herself, grew strong rapidly, and is to-day in the best of spirits.

Briefly stated, Mrs. X. has been pregnant three times. Each time there has been no trouble up to the fourth month. At this period she miscarried once, and there was evidently danger of the same the other times. After the fourth month was completed the first and third pregnancies presented the same train of hysterical symptoms accompanied by weakness, pallor, loss of flesh and constipation. The urine, though carefully exam-

ined at intervals, gave no trace of albumin. Nothing afforded more than temporary relief. A blister to the back of her neck gave good results; the discomfort seemed to cause her to forget her ordinary troubles. A strong interrupted current would likewise hold her attention.

Since December I have seen Mrs. X. frequently, and have noticed nothing unusual save a slight 'witching of the shoulder. A former servant of her mother tells me that Mrs. X. had "spells" at each monthly period while she was still in school. During these spells she would moan and throw herself about, not noticing others in the room.

During the past six months I have attended a brother and three sisters of Mrs. X., all of whom presented nervous symptoms entirely incommensurate with the cause of the trouble.

The case is of particular interest to me at present, for, since writing the above, I have learned that Mrs. X. is again pregnant, or at least she believes that she is, dating from April 1. Granting that she is, is it not probable that there will be some disturbance at the fourth month? If *this* trouble is overcome, will there not follow the same train of nervous symptoms that I have described?

HOSPITAL REPORTS.

Woman's Clinic, Cincinnati College of Medicine and Surgery.

SERVICE OF PROFESSOR CHARLES A. L. REED.

VESICO-VAGINAL FISTULA CONSEQUENT UPON VAGINAL HYSTERECTOMY. MODIFICATION OF TAIT'S OPERATION. RECOVERY.

Mrs. M., æt. 34, submitted to vaginal hysterectomy for carcinoma of the uterus in February last. The uterus at the time was found to be much enlarged, and was intimately adherent to the bladder for over three and a half inches. In the act of enucleation the bladder was accidentally entered and a fistula as large as a silver dime resulted. It was not, strictly speaking, a vesico-vaginal, but rather a vesico-abdominal, fistula, as the opening was near the fundus of the bladder, and communicated with the peritoneal cavity. The urine escaped from the pelvis through the small cicatricial orifice at the apex of the vagina representing the former uterine site.

Operation, October 15. Present and assisting, Drs. Boyle, Hall, Cassett, and W. F. Taylor. The patient was put upon her back, anesthetized, and her legs flexed as for perineal operation. Jones' self-retaining speculum was inserted, affording an excellent view of the anterior wall and vault of the vagina. The cicatricial ring was dilated, and the fistulous portion of the bladder brought into view. The peritoneal and mucous layers of the wall of the bladder were now separated around

the whole circumference of the fistula. It was found difficult to make the dissection at the angles of the opening, so the external fistulous orifice was enlarged by making a slit in the superficial layer by means of the scissors which were used for the dissection. The upper and lower flaps were now seized with fixation forceps and drawn away from the cystic layer. The dissection was carried to the depth of half an inch. A continuous catgut suture was now passed through the cystic layer in such a way that when drawn up the denuded surfaces above and below the external fistulous orifice would be approximated. Interrupted wire sutures were now employed to close the external flaps, ten being employed for the purpose. In this way the "slit-flap," and all the breadth of the raw surface of which it is capable, were secured; and union was complete in ten days.

The operation differs from Mr. Tait's: (1) In the lateral slits in the external layer; (2) in the greater depth of the dissection; (3) in the employment of the continuous catgut for the cystic layer; (4) in the use of the interrupted wire suture instead of the "tobacco-pouch-draw-string suture," for finally closing the opening.

MEDICAL PROGRESS.

BRONCHO-PNEUMONIA IN CHILDREN.—TORDENS says that the age of the patient is an important matter in prognosis. The younger the child, the less easily does it bear an attack of broncho-pneumonia, and children of less than three months almost always succumb. The malady is much more fatal when consecutive to an infectious disease. The various medicaments recommended are the antiphlogistics, revulsants, expectorants, emetics, excitants, and hydropathy. Henoeh prescribes local blood-letting in vigorous subjects. In case of excessive dyspnoea in strong children, an amelioration may be brought about by subtracting a certain amount of blood. Cadet de Gassicourt denies to blood-letting the power of alleviating dyspnoea, and Tordens holds the same opinion. Dry cupping on the chest may aid in alleviating the pulmonary congestion without impairing the physical powers of the patients. Where there is a tendency to hepatization, indicated by soufflé at the same point for several days, a blister applied after the fever has diminished gives excellent results. Large vesications should not be used. Emetics are indicated when there is abundant mucus secretion from the bronchi; but care should be taken in employing them, on account of their tendency to cause prostration. Ipecac is one of the best emetics to use in broncho-pneumonia of children. In large doses it causes vomiting and lowers temperature. It is also an excellent expectorant. But in cases of capillary bronchitis

or broncho-pneumonia Tordens prefers apomorphine given in doses of 1 or 2 centig. a day. It sometimes causes vomiting, but this is not followed by dangerous prostration. Hydropathy has remarkable efficacy in broncho-pneumonia of children. It causes deep inspirations, produces a cutaneous derivation, and acts favorably by the vapor of water with which it fills the atmosphere. Tordens envelops the patient from the neck to the umbilicus in cold or tepid water compresses. Vapor of water should be constantly disengaged in the room.—*Revue Générale de Clinique et de Thérapeutique*, No. 43, 1888.

CANCER BY SKIN GRAFTS.—The *Centralbl. f. Chirurgie*, 1888, p. 726, mentions the following case, in which carcinomatous nodules were transplanted from one breast to the other by means of skin, and which possesses considerable interest both pathologically and therapeutically. Having determined that a case in which the breast had been previously removed for cancer was too far advanced to permit of a second operation, HAHN obtained the patient's leave to ascertain if it was possible to inoculate the skin over the second breast by pieces derived from the affected skin over the first. Numerous small cancerous nodules were, on April 9, cut off as evenly as possible with grafting scissors, and transplanted by Reverdin's method on the sound breast, after skin on the selected spot had been removed so as to leave an ulcer for their reception. On May 1, the transplanted pieces had taken firm root, and the ulcer was completely covered with epidermis. On May 19, at the edge of the pieces of skin some small projecting nodules appeared about the size of a millet seed; they gradually increased in dimensions, and by June 26 had reached the size of a cherry-stone. Four days later the patient died. On microscopic examination of sections of the transplanted skin, all of which gave a characteristic appearance, it was evident that the main mass of the tumors consisted of a well-developed connective tissue stroma, containing irregular masses of epithelial cells inclosed in it. These masses had clearly insinuated themselves into the healthy tissues, which were on all sides beginning to be invaded by the epithelial nests. The above related facts seem to prove clearly that carcinoma can, under suitable conditions, be inoculated upon healthy tissues; and the practical deduction to be drawn from this circumstance is, that great care should be exercised during an operation to avoid taking up pieces of cancerous tissue in the forceps, and leaving them adherent to the edges of the wound, where they may afterward find a permanent resting place.—*Practitioner*, November, 1888.

EFFECT OF HYOSCINE.—DR. S. FISCHER, of Buda-Pesth, writing in the *Gyógyászat* on the in-

fluence of hyoscine, arrives at the following conclusions: 1. The "hyoscinum muriaticum" may be successfully used as a sedative in greatly-excited or maniacal patients. 2. As the effect of hyoscine manifests itself even after a dose of half a milligramme, larger doses should be avoided, though the dose may be increased to one milligramme without any harm. 3. No bad after-effect is observed in such doses. 4. The drug also proves efficient as a hypnotic; but, owing to its depressing influence on the organism, it should only be used in those cases in which other drugs are ineffectual. 5. In five cases—namely, of chronic mania, chronic dementia, and acute insanity—the drug did no good. This was perhaps due to idiosyncrasy on the part of the patients.—*British Medical Journal*, Oct. 20, 1888.

TREATMENT OF CORNS ON THE SOLES OF THE FEET.—This affection is best treated, according to UNNA, by painting a circle of zinc-clay paste about the corn, and, when this has dried on, placing inside the ring a piece of salicyl-creasote plaster muslin (salicyl 40, creasote 40); then the whole is covered over with the paste and allowed to dry. With sweating feet or where the feet are very hot, the part is to be enveloped before the dressing is dry with a soft muslin bandage; this is to be stuck fast with the paste. The dressing should be changed once or twice a week, each time removing the loosened horny layer.

TREATMENT OF INFANTILE ECZEMA.—In the obstinate cases of eczema that occur in children during the second half of the first year, and affect particularly the face and extensor aspects of the extremities, Boeck recommends compresses of a weak solution of nitrate of silver (1 to 500), alternating with an ointment. The compresses are applied covered with gutta-percha paper for two or three hours night and morning, and a soothing ointment during the rest of the day and at night. The unguentum vaselini plumbicum suits very well.—*Vierteljahresschrift für Dermatologie und Syphilis*, June, 1888.

CANNABIN IN BASEDOW'S DISEASE.—VALEIRI, after using cannabin in three cases of exophthalmic goitre, recommends the following formulæ:

R. Cannabin. gr. iv ss
Sugar of milk, q. s.
Make 5 pills.

S.—To be taken in 24 hours.

. Cannabin. gr. iv ss
Distilled water. ʒ iij
Syrup of orange flowers. ʒ j m

S.—Take in teaspoonful doses in 24 hours.

Or, we may prescribe a decoction of 2 or 4:100 parts, or doses of ℥ 15 or 30 of the tincture.—*Wiener Med. Presse*, No. 41, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 63 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Duglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, DECEMBER 8, 1888.

SUDDEN HEART-FAILURE IN DIPHTHERIA.

At the first meeting of the New York Academy of Medicine in November DR. J. LEWIS SMITH read a most suggestive paper on this subject, admirably supplemental to that read by Dr. Wm. H. Thompson last Spring, on diphtheritic paralysis. In no other disease is sudden heart-failure so frequently met with as in diphtheria, and in no other disease is the physician so likely to be deceived as to diagnosis, since the sudden failure of the heart often occurs in convalescence.

As to the cause of this condition, Dr. Smith thinks that Bouchut and Lagrane's hypothesis, that it is due to endocarditis, is untenable, but that the view that the sudden failure is due to granulo-fatty degeneration of the heart is more plausible. Oertel is in favor of this view, and it must be said that such degenerative changes, occurring in a considerable proportion of the muscular fibres, would render the cardiac contractions feeble, and perhaps inadequate. But in the majority of cases the loss of cardiac power is sudden, and occurs during convalescence, when degenerative changes are not likely to occur. In most cases the cardiac contractile power does not appear to be notably weakened before the attack of heart-failure, as it would probably be if the myocardial degenerative changes were the sole or chief cause. Furthermore, in typical cases of sudden heart-failure the microscope sometimes shows the myocardium to be perfectly healthy. Heart-clot cannot be the primary cause, but is a secondary condition, as shown

by Cadet de Gassicourt and Sanné. Dr. Smith regards the theory of deficient innervation, or a true cardiac paralysis, as the most tenable hypothesis, applicable to the largest number of cases, and the most satisfactory explanation of the cases in which death occurs during convalescence, as well as of those in which the necropsy shows a healthy state of the heart. The theory of arrested or deficient innervation partly explains the concomitant symptoms, such as vomiting, epigastric pain, and dyspnoea or irregular respiration.

Etiologically this cardiac paralysis is associated with and often preceded by other forms of paralysis. What is true of the causes and nature of palatal and multiple paralyses, even of abolition of tendon-reflexes, is most probably true also of cardiac paralysis. We are all familiar with the theories of Gubler and Trousseau, and with the microscopic examinations of Charcot, Buhl, Oertel, and others, which have shown that the peripheral nerves distributed to paralyzed muscles sometimes undergo degenerative changes; and marked anatomical changes have been found in the gray matter of the cord and the roots of the spinal nerves. But the theory as to the etiology of diphtheria that is gaining acceptance, is that systemic infection occurs through ptomaines, produced upon the surface by the microbes, and then enters the system through the lymphatics and blood-vessels. If this hypothesis be true we must attribute anatomical changes in the interior of the body, in the peripheral nerves and cerebro-spinal axis, to the agency of ptomaines, and ptomaines must be the causal agent, acting directly or indirectly, in diphtheritic paralysis. In his recent paper Dr. Wm. H. Thomson writes: "It is quite conceivable that a ptomaine may follow upon the changes which the diphtheritic process sets up in the organism, and thus produce all its characteristic symptoms. The special tendency of diphtheritic inflammation to cause necrotic and gangrenous lesions lends further support to this surmise." The ptomaines spring into existence suddenly and unexpectedly under favorable conditions. Clinical facts appear to harmonize best with the theory that a ptomaine is the direct cause of the paralysis, especially in cases occurring early and quickly cured; although it seems idle to argue that the marked degenerative peripheral and central nerve lesions so frequently present in those who have died with diphtheritic paralysis,

do not prolong and intensify the paralysis, and are in some instances its primary cause.

As to the treatment of cardiac paralysis, Dr. Smith said that it was evident, from the nature of the trouble, that it must be combatted promptly and with the most active remedies. The patient should be kept quiet in bed, with the head low, and alcoholic stimulus administered at once. In sudden seizures hypodermic injections of brandy act most promptly in sustaining the heart's action. Ammonia, camphor, musk and electricity are also of service, as well as the predigested beef preparations, peptonized milk, and other concentrated foods designed for those with feeble digestion. If the urgent symptoms are relieved by these measures, such remedies should be employed as are useful in other forms of diphtheritic paralysis.

DEEPER BRAIN SURGERY.

Will tapping and draining the ventricles of the brain become a definite and legitimate surgical procedure? This question we can answer only by considering a recent paper¹ by that rarely accomplished anatomist and careful surgeon, DR. W. W. KEEN, in which he records a case under the following title: "Exploratory trephining and puncture of the brain almost to the lateral ventricle. For intracranial Pressure supposed to be due to an Abscess in the Temporo-sphenoidal Lobe. Temporary Improvement; Death on the Fifth Day; Autopsy; Meningitis with Effusion into the Ventricles. With a description of a proposed Operation to tap and drain the Ventricles as a definite Surgical Procedure."

The patient was a scrofulous child, æt. 14 years, with a purulent discharge from the ear for six months or more, sudden vomiting evidently cerebral, headache, a tender spot above and in front of the left ear and at no other point, possible aphasia, paralysis of the left sixth nerve, congestion of the optic papilla more marked on the left side, pulse normal, temperature, while not normal or sub-normal, but little elevated until a little while before death. Meningitis and cerebellar abscess were excluded for obvious reasons, as were involvement of the motor region, abscesses in the frontal and occipital lobes, mastoid disease, abscess between the dura and the skull, and plugging of the lateral sinus.

The symptoms pointed to mischief on the left side, and mostly to abscess of the temporo-sphenoidal lobe.

As shown by the title of the paper, the patient died on the fifth day. The autopsy showed that, saving a slight disintegration of the brain tissue in a very thin layer around the track of the drainage tube, the cerebral substance was healthy; and, remarkable enough, no trace could be found of any evidence of puncture in the brain tissue. The internal extremity of the drainage canal, which was one inch long, was within a quarter of an inch of the distended left ventricle. Dr. Keen says, in regard to the use of the needle and grooved director in exploring the brain:

When the dura is intact the syringe must be used, but it should be used with great caution on account of the suction, for, though I had a suction cavity of only seven to ten minims in the barrel of my syringe, yet the brain substance was sucked up into it every time. I cannot but think that the introduction of a grooved director would be safer and certainly, as shown by the post-mortem, did no more injury to the brain substance than the syringe itself, with its certain loss of tissue. The grooved director would allow pus or any other fluid to escape by its deep groove. The sharp point of the needle might readily puncture a vein, a large artery, a sinus, or possibly one of the large nerves, but the blunt end of the director exposes us to no such danger, and invites to a more extended and thorough exploration.

The experience of Beck, Watson and Weir shows that Dr. Keen's objections to the use of the needle are not merely theoretical.

As the result of his observations in this case Dr. Keen proposes tapping of the ventricles as a systematic operation in any similar case of dropsy of the ventricles or of abscess in them. He draws an analogy between the serous membrane of the abdomen and that of the brain, and pleads for a similar treatment in cases of similar disease. As we open the belly and drain in tubercular peritonitis with good success, he proposes the same thing for the brain; and he claims that, on account of the confined position of the brain, the operation is even more urgently necessary, than in the case of pressure in the abdomen. To the possible objection that much drainage of cerebro-spinal

¹ Medical News, Dec. 1, 1888.

fluid would be dangerous, Dr. Keen replies: 1. We do not know that till we try. 2. In his brain-tumor case, in Horsley's spinal-tumor case, and in a case of Championnière's long-continued and abundant drainings were not sources of danger. 3. Experience may show us that possibly in the head, as in the abdomen, simple evacuation of fluid without its continuous drainage, may be not only feasible, but best. Dissections and trials on the cadaver have shown that the motor zone must be avoided, the neighborhood of the fissure of Sylvius must be avoided, and known sense-centres must be avoided; the so-called "latent zones" must be utilized.

Dr. Keen's proposal is certainly a bold one; did it come from a less careful surgeon it might be called rash. But the surgeon of to-day can scarcely think of any reasonable and practicable operation on the brain as some surgeons of Dr. Meigs' day thought of ovariectomy. Dr. Keen proposes three routes as practicable for the operation in question. The limitation of space, however, preclude discussion of them.

EDITORIAL NOTES.

DR. THOMAS G. MORTON, of Philadelphia, has been made an honorary member of the Society of Mental Medicine, of Ghent, Belgium.

GARBAGE CREMATION.—The board of health of San Diego, Cal., does not favor cremation as a method of garbage disposal. Has the board made a proper examination of the matter?

SIR WILLIAM JENNER has resigned from the British Medical Association, it is said, on account of the publication in the *British Medical Journal* of the late Emperor Frederick's note to Dr. Mackenzie.

SCARLET FEVER IN MILWAUKEE.—On Nov. 17 there were 24 cases of scarlet fever in Milwaukee, and within the next week 14 new cases developed. Up to Nov. 24 there had been 12 recoveries and 2 deaths.

COMPULSORY VACCINATION.—Small-pox is causing some alarm on the Pacific Coast and a short time ago fourteen doctors and a number of medical students made a descent on the schools of Portland, Ore., and vaccinated the unsuspecting pupils *vi et armis*. Five hundred and thirty were thus vaccinated in a single day.

FOREIGN BODY IN THE TRACHEA.—Some three months ago a 5-year old boy in Milwaukee put a brass staple into his mouth, and the staple was carried into the trachea in some manner. The boy had periodical attacks of coughing until a few days ago, when during one of the attacks his father held him up by the feet, and the staple passed into the mouth, whence it was removed.

ACTINOMYCOSIS.—At a recent meeting of the St. Louis Medical Society Dr. L. Bremer exhibited the jaw of an ox affected with actinomycosis. Dr. Bremer believes that actinomycosis frequently exists in man, always in the chronic form, and that it is frequently confounded with tuberculosis, bronchial affection, and sometimes with other diseases.

SANITARIUM FOR PHTHISIS.—It is said that a sanitarium for consumptives on a novel plan is to be established at Reineckendorf, a village near Berlin. A large, cylindrical building will be occupied in the upper part by the patients, while the ground floor will be given up to the accommodation of large numbers of milch cows, the exhalations from which will be conducted to the apartments above.

INFANT MORTALITY IN A FOUNDLING ASYLUM.—The Board of Health of Ontario reported on Nov. 13 that 70 per cent. of the infants placed in the Foundlings' Home in Ottawa had died during the year. The establishment known as the "House of Bethlehem" receives a subsidy from the Province. The only charge so far against the proprietor of the institution is that infants do not receive proper nursery and feeding. As yet there is no evidence to show that there has been any criminal negligence, but an investigation will probably be made.

THE COST OF PLEURO-PNEUMONIA AMONG CATTLE.—In an address to the Consolidated Cattle Growers' Convention, which recently met in Chicago, Mr. Salmon said that more than 7,000 head of cattle were destroyed in different States last year in consequence of pleuro-pneumonia. The effect of this announcement was to impress the convention with the danger to be apprehended from the spread of this destructive scourge, and plans have been formulated for presenting the matter to Congress, which will be asked to take prompt and effective measures for

the extirpation of the malady and the protection of the cattle interest. It is a matter that concerns not only an important industry, but that involves sanitary considerations of great moment, and should receive prompt attention. Meanwhile, some one should give the cattle growers and other people some idea of the extent to which preventable *human* diseases affects the pockets of the people. The brain of the average man is most easily reached through his pocket-book.

A NEW DISINFECTANT.—It is stated that a new and powerful disinfectant has lately been discovered by a Parisian chemist, and if what he claims for it be true, it will be adopted for very many purposes for which disinfectants are generally used. The basis of the preparation has been obtained from coal-oil, and is a brown liquid of a not disagreeable odor. It is said to be the result of a peculiar saponification of the oil by a chemical process with a mixture of caustic soda. The value of the disinfectant was accidentally discovered by the discoverer, who, desiring to save a pet tree around which a lot of fungous moss had grown, sprinkled some of the mixture around the roots. By repeated use the excrement was shortly afterward noticed to separate from the tree and fall to the ground. Horses were also sponged with a weak solution of the mixture and it was noticed that flies that generally pester the animals gave them a wide berth.

SOCIETY PROCEEDINGS.

American Academy of Medicine.

Twelfth Annual Meeting, held in the Governor's Rooms of the New York Hospital, November 13, 1888.

TUESDAY, NOVEMBER 13—FIRST DAY.

THE PRESIDENT, DR. FREDERICK HENRY GERISH, of Portland, Me., called the Academy to order at 10:30 A.M. The minutes of the last annual meeting were read and approved. The deaths of the following members were reported: C. R. Agnew, New York; M. H. Borland, Pittsburgh; Howard Pinkney, New York; Theodore T. Wing, Susquehanna, Pa.; E. S. Dunster, Ann Arbor, Mich.; Stephen B. Kieffer, Carlisle, Pa.

The first scientific business was the report of the standing committee on the

REQUIREMENTS FOR PRELIMINARY EDUCATION IN THE MEDICAL COLLEGES OF THE UNITED STATES AND CANADA,

by DR. LEARTUS CONNOR, of Detroit, Mich. In speaking of the preliminary requirements, stress was laid upon the importance of a sound body. In no learned profession is the mortality so great as in the medical. Reference was made to the methods of determining whether or not the colleges fulfil the statements made in their announcements. One of these was by means of decoy letters. This plan last year indicated that the majority of colleges fulfilled these statements. Another method of judging is by examinations of the graduates by disinterested parties, as the army, navy, etc. Positive data are not at present available, but in regard to these examinations the principal deficiency seems to be in the preliminary education. The general verdict of editors is that the average doctor is lamentably deficient even in what is known as common school education. There are in the United States 116 medical schools. According to their announcements 89 exact certain educational requirements, but 19 of these require no more than they can help. It is futile to endeavor to directly influence medical colleges to make these requirements. It can only be obtained by awakening in the mind of the profession and people a sentiment that a definite preliminary education is necessary to the medical student.

DR. A. L. GIBON, U. S. N., offered the following resolution, which was adopted:

Resolved, That the American Academy of Medicine expresses its high approval of the aid afforded to the cause of higher medical education by the College of Physicians and Surgeons of New York, in its recent requirements for matriculation, which it commends to the profession as worthy of adoption.

DR. J. C. WILSON, of Philadelphia, read a paper on

THE CAUSES AND PREVENTION OF THE OPIUM HABIT AND KINDRED AFFECTIONS.

These affectionous are prevalent to a large extent, though there are no reliable statistics concerning their frequency. The causes may be grouped under three heads: First, example, as shown in the case of those who become opium eaters through the example of friends. Second, suggestion, as is shown in those who fall into these habits through the reading of literature concerning it or from familiarity with the drugs, as in the case of doctors, druggists, nurses and students of medicine. A large proportion of individuals who are led by these causes to contract such habits, do so in the absence of sickness or physical pain. Third, medical prescriptions. It is an unfortunate fact that the greater number of the victims of habitual vicious narcotism become so through the prolonged abuse of narcotics originally prescribed for the relief of pain. Among

the measures suggested for the prevention of the formation of such habits were, first, the dissemination of a wholesome knowledge of the methods by which the opium habit and kindred affections are induced; of the serious character of these affections, and of the dangers attendant upon an ignorant and careless employment of narcotics. Second, a reasonable and temperate presentation of the facts in the popular works upon hygiene. Third, the exercise of every possible precaution on the part of physicians in prescribing narcotics. It is good practice to keep the patient in ignorance of the character of the anodyne used and of the dose. Physicians should personally control, as far as possible, the use of such drugs, and see that they are taken infrequently and in the minimum amounts capable of producing the desired effect; the occasional alternation of anodyne medicaments is desirable. Prescriptions for drugs of this kind should not be renewed by druggists without the written order of the physician. Finally, a merely palliative treatment should not be allowed to assume too great importance in the management of curable painful affections. Under no circumstances, except in the final stages of hopelessly incurable painful affections, should the hypodermic syringe be placed in the hands of the patient. Uniform and efficient laws to regulate the sale of narcotic drugs are desirable. Existing laws relating to this subject are a dead letter; they are neither adequate to control the evil, nor is their enforcement practicable.

DR. R. L. SIBBETT, of Carlisle, Pa., thought the physician should not tell what he is giving when he prescribes opium. He also thought that we should never write a prescription in which the word opium appears.

DR. LEARTUS CONNOR considered it unsafe for the physician to administer a narcotic in his own family. He could give a large number of instances where the wives and other members of physicians' families had become addicted to the use of opium in this way. It is unsafe for the physician to administer opium to himself.

DR. THEOPHILUS PARVIN, of Philadelphia, read a paper on

THE IMPORTANCE OF PRACTICAL OBSTETRICS IN THE COURSE OF INSTRUCTION GIVEN BY MEDICAL SCHOOLS.

A recent visit to Munich, where he spent some time observing the method of teaching obstetrics in the University of Munich pursued by Professor Winckel, made him conscious of the great deficiencies of the American plan of obstetric instruction. The science of obstetrics is admirably taught in our medical schools, by pictures, models, illustrations of various sorts, with preparations of pelves, etc., but the vast majority of American medical students graduate without having witnessed a case of labor. In many medical schools

the diagnosis of pregnancy by auscultation and by palpation is not taught, so that the graduate sees with his own eyes and feels with his own hands. There is also reason to believe that the mortality of private practice is greater than that of hospital practice. Then, too, the unqualified obstetrician contributes largely to the work of the gynecologist. While attendance on poor women at their homes is better than no practice at all, yet the student will derive more benefit from the study of cases collected in a maternity hospital, where many cases can be studied under the instruction of a competent teacher. The practical teaching of obstetrics is to be directly associated with its scientific instruction. There should therefore be a maternity belonging to every medical school in which obstetrics is taught. In large cities there would be no trouble in obtaining sufficient material for this method of teaching. Through the efforts of the author, the Trustees of the Jefferson Medical College authorized the establishment of a maternity department in connection with the hospital. Thirty-four women have been confined without a death. The room being insufficient an outdoor department was established. Here there has been 151 applicants, 106 have been confined, with but one death. This occurred two weeks after labor. The cause of death was not positively ascertained.

Dr. Parvin then described the methods employed at the Munich University, basing his remarks on a report furnished by Dr. J. Clifton Edgar. Obstetrics is there taught by (1) didactic lectures, (2) obstetric clinics, (3) touch courses, (4) operative courses on the phantom, (5) management of labor cases, (6) bedside instruction in the puerperal wards. The student is required to attend obstetrical clinics for nine months. In that time he would at a low average thoroughly examine eighteen gravid or parturient women and to deliver four women.

In concluding Dr. Parvin said: "Why would it not be wise for this Academy, which should be a light and a guide to the American profession, leading it to higher and giving in larger views on those duties and responsibilities, with hearty unanimity declare that practical obstetrics should be made a part of the regular course in every medical college? With the seal of your approval those who are laboring to this end will be given strength and hope."

AFTERNOON SESSION.

DR. F. H. GERRISH delivered the
PRESIDENT'S ADDRESS.

Reference was first made to the necessity for something more than a mere grammar school education as a preparation for the study of medicine. The course of a student without proper preliminary education was traced at length. Until re-

cently any male of the human species, who would pay the necessary fees, found no difficulty in entering. A few years ago several medical schools established a preliminary examination. This was attributed by the speaker largely to the action of the Illinois State Board of Health, to the effect that if the schools wished their diplomas to be recognized in that State, they must have a preliminary examination. He thought that the labors of the Academy should be rather to elevate the standard of medical education rather than the investigation of scientific problems.

The President then referred to certain amendments which had been proposed at previous meetings. One of the Amendments considered, related to Asst. VIII, Sec. I, which now reads: "The Fellows of the Academy in their relations with each other and with their fellow men, agree to be governed by the principles embodied in the present code of ethics of the American Medical Association, and by the constitution and by-laws of the Academy." The amendment suggested "The Fellows of the Academy will be governed by those principles which actuate educated, cultured and honorable men in every profession, and by the constitution and by-laws of the Academy." Dr. Gerrish favored the adoption of the amendment.

Never before had it been appropriate to address the Academy as "Ladies and Gentlemen;" but to-day it was his privilege to use this significant expression. It is not creditable to our country or in keeping with the liberality which therapeutically characterizes our institutions, that a discrimination should so long have been made against women in scientific associations. It is noteworthy that some of the staunchest upholders of a strict preliminary examination as ascertained by the detective work of our committee on the subject last year, were the schools managed by women.

Since the last meeting, the grave had closed over several members of the Academy, and the speaker spoke briefly of the various deceased members.

In order to facilitate the procuring of essays for the annual meetings, it was suggested that a special committee charged with this work be appointed. In reference to the Congress of American Physicians and Surgeons, he thought it advisable for the Academy to consider the expediency of associating itself with the other societies composing the Congress, thus bringing it into more prominent notice than it has hitherto enjoyed.

DR. R. LOWRY SIBBETT, of Carlisle, Pa., read a paper entitled

A FEW WORDS CONCERNING THE ACADEMY.

The Academy was organized in 1876, at a time when the standard of medical education was at its

lowest point. Medical institutions were numerous and their doors thrown open to all, irrespective of qualifications. There were at least also a dozen of so-called diploma mills. It was at this period that the Academy began to explore these novel methods of manufacturing medical practitioners. The addresses by the President and the papers by the Fellows have generally been on some branch of this semi-medical subject and widely distributed among professional and educated classes. These addresses have also pointed out the true and only method by which men may become safe and honorable practitioners. The Academy has strongly insisted upon the necessity of preliminary education. At the time of the organization of the Academy in no State were there laws relating to the practice of medicine that could be enforced. Most of the States now have laws which can be carried out and many have State Boards of Examiners. Graded courses have been adopted in the best medical schools, with preliminary examination and frequent written examinations. The "diploma mills" no longer exist. This is the only Association in which the addresses referred to could have been made, because the sentiments expressed in them have been too much at variance with the sentiments of the majority of the profession.

The Academy is the only society in which an academy qualification is required. There are three departments of activity indicated in the organic law of the Academy, (1) the reading of papers on what may be called the higher science of medicine, (2) the exposure of imperfect methods of medical education, and (3) the bringing into the Academy of eligible members of the profession. The Academy had set a high standard for admission, but he believed that the doors should not be closed against those eminent practitioners who although they did not possess the degree of A. B., had pursued protracted courses of preliminary study in literary schools.

Dr. George Jackson Fisher, of Sing Sing, N. Y., read a paper entitled *The Famous Historic Masters of the Healing Art were Men of Classical Education*.

Dr. L. Duncan Bulkley, of New York, read a paper on *The Relations between the General Practitioner and the Consultant or Specialist*.

WEDNESDAY, NOVEMBER 14,—SECOND DAY.

DR. CHARLES CARROLL LEE, of New York, read a paper on

THE NECESSITY FOR POST-GRADUATION INSTRUCTION IN THE PRESENT STATE OF AMERICAN MEDICAL EDUCATION.

The first Post-Graduate Medical School was opened in New York in 1882. There are now six in operation in different medical centres. These courses are attended by practitioners anxious to

brush up on certain subjects. Some of the colleges strive to provide clinical instruction for medical men but the means at their disposal are not sufficient to provide the instruction required by practitioners. The post-graduate schools are continually increasing in popularity. Here the student in any particular branch is able to devote his entire time to that subject. He is also able to follow the practice of a number of experts, instead of being bound down to the methods of a single medicine. For one mature enough to observe and judge for himself, the benefit of this is obvious. It is difficult to conceive how London, Berlin, or Vienna, can offer greater facilities for clinical teaching than are to-day available in this city. To the medical teacher a frequent European visit is desirable, not only to perfect his methods of instruction but to liberalize his mind, but the time has arrived when if the American teacher of medicine does his whole duty the American student should lack no practical knowledge of his profession.

The consideration of the following

AMENDMENT TO THE CONSTITUTION

was taken up: "The Fellows of the Academy will be governed by those principles which actuate educated and honorable men in *every profession*, and by the constitution and by-laws of the Academy." After a prolonged discussion, the amendment was laid on the table for one year.

The following resolution was presented by the Council and adopted: That the Academy heartily endorses the suggestion of Dr. Parvin, in his Address, that *practical obstetrics* should be made a part of the regular course in every medical college.

Dr. HOSMER A. JOHNSON, of Chicago, read a paper on

THE INFLUENCE OF THE WORK OF THE ILLINOIS MEDICAL PRACTICE ACT UPON MEDICAL EDUCATION.

The Illinois State Board of Health was created in 1877. One of its first acts was the passage of a resolution that the diploma of a college graduating two classes in one year would not be considered in good standing after July 1, 1878. This compelled some of the prolific schools to adopt a single graduating term. In 1880 the Board made a study of requirements of medical schools. In 1884 the Board adopted a schedule of the minimum requirements for graduation in the State of Illinois. This has led to an increase in qualifications required by many of the schools. There are now 114 colleges which require evidence of preliminary study as a condition of admission. In 1883 there were only 45. Forty-three colleges now exact a three years' course, as compared with 22 in 1883. The Board has now adopted a resolution defining the phrase "medical colleges in good standing" to mean "only those colleges

which shall, after the session of 1890-91, require four years of professional study, including any time spent with a preceptor, and three regular courses of lectures, as conditions of graduation, and shall otherwise conform to the schedule of minimum requirements heretofore adopted by the Board.

The Treatment of Uterine Disease by other than Surgical Means, by Dr. W. F. Waugh, of Philadelphia, was read by title, as was *The Evils of a Medical Dialect separated widely from Classical English*, by Dr. Edmund Andrews, of Chicago.

The following were elected

HONORARY MEMBERS.

Dr. J. H. Rauch, Springfield, Ill.; Sir Joseph Lister, London; Sir Spencer Wells, London; J. Lucas-Championnière, Paris; Dr. H. D. Didama, Syracuse.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President—Dr. Leartus Connor, Detroit.

Vice-Presidents—Drs. Peter D. Keyser, Philadelphia; L. Duncan Bulkley, New York; Theophilus Parvin, Philadelphia; George J. Fisher, Sing Sing, N. Y.

Secretary and Treasurer—Dr. Richard J. Dunglison, Philadelphia.

Assistant Secretary—Dr. Charles McIntire, Jr., Easton, Pa.

Place of Next Meeting—Chicago, Ill.

ASSOCIATION ITEMS.

Committee on Dietetics.

CIRCULAR NO. 1.

The Committee on Dietetics appointed by the American Medical Association will hold its next session at Newport, R. I., during the meeting of the Association.

It is thought that the greatest good would result by directing discussion to a single class of dietetic subjects; the committee, therefore have agreed that the papers to be restricted to the consideration of the topics relating to "The Collection, Preparation and Serving of Food for the Family;" and that the Report of the Committee for 1889 shall be limited to the presentation of that class of subjects."

As one topic, among others, belonging to this class, and as one of vital importance to our Nation, it is respectfully suggested that special attention be given to the consideration of the best kinds of food, methods of preparation, and modes of feeding, especially for infants and young persons, to improve the American race.

Papers that may treat of other dietetic subjects

may be read, but will not be incorporated in the annual Report.

The sessions of the committee will be public and open to all who may wish to participate; and any member of the Association may offer a paper for consideration, or take part in the discussions. This new departure, it is hoped, will appeal strongly to those, who, by study and observation, have earned the right to be heard on the subject of dietetics.

While the discussions will be open and free, it is respectfully suggested to all who intend to participate, that the papers should be brief and practical, so as to afford time for their discussion. Each paper should be confined to some specific topic bearing upon the class of subjects under consideration by the committee. What is wanted is not so much variety of themes as fulness and clearness on special topics, in order that precise deductions may be established which shall possess permanent value, and which may in some measure serve as a plain and reliable guide for the busy practitioner.

Papers by eminent men are already announced, and others are promised. The titles of all papers to be read, with the names of the respective authors, will be given through the medical journals.

E. A. WOOD, M.D., Chairman,
Pittsburgh, Pa.

FRANK WOODBURY, M.D., Sec'y.,
Philadelphia, Pa.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Effects of Stramonium—Climate and Mortality in Great Britain—Verdi's Hospital at Villanova—Anisic Acid a Substitute for Salicylate of Soda—Encysted Calculus—Case of Malingering—Buildings of the Cremation Society—Effects of Pepper and Mustard on Digestion.

A surgeon of the Army Medical Department records the case of a man found insensible at a village in Upper Burmah, who on partially waking out of his stupor, showed symptoms of violent insanity. It seems that about a week previously, he had both chewed and smoked some leaves of the stramonium plant, which had caused first a feeling of sickness and nausea, and then stupefied him. Some amelioration was produced by the administration of forty grains of bromide of potassium, but the patient managed to escape from the military hospital before very much could be done with him.

The climate of the British Islands has been the subject of a good deal of railery by the unintelligent foreigner, but certain statistics of European

mortality which have just been compiled are calculated to show in favor of the British Isles. The United Kingdom after all is the healthiest country in Europe. The rate of mortality in the Roman and Venetian State is 4 in 28, in Greece and Turkey 1 in 30, in Switzerland, Austria, Spain and Portugal 1 in 40, in European Russia and Poland 1 in 44, in Germany, Denmark and Sweden 1 in 45, and in Norway 48. In England the rate of mortality is only 1 in 58, in Ireland it is 1 in 53, and in Scotland 1 in 59.

Interesting accounts have recently appeared of the hospital recently opened at Villanova, and entirely built and supported by Verdi the Composer. Villanova is in close vicinity to the country seat which Verdi has made his home and where he lives in the manner of a farmer, abandoning all music from his thought, and without so much as a piano in his house. The new hospital, an unpretentious but large building, lies in a commanding situation overlooking the Po and with a distant view of the Apennines. There are two wings, one for women, the other for men, and a separate ward is set aside for contagious cases. There is also a hydropathic establishment, and most elaborate arrangements have been made for the disinfection of linen. An efficient staff of nurses and attendants is also provided, and Signora Verdi has made the housekeeping department her special care. The large sums required have been contributed by Verdi, who has also deposited sufficient funds for the maintenance of the hospital. At the opening ceremony only Verdi and his family and the physician were present. No speechifying was allowed, Verdi remarking that the only inauguration necessary was the admission of the sick and ailing, twelve of whom were received then and there.

Anisic acid is talked of as a substitute for salicylate of soda, in the treatment of rheumatism, neuralgia, etc., and as an antiseptic for the preservation of animal and vegetable substances. This product has long been known to cultivators of organic chemistry, it was originally obtained by oxidizing the essential oil of anise, by means of nitric acid, but more recently it has been obtained from some derivatives of the coal tar products. This new product is about to be introduced into therapeutics. It is supposed that it can be given in the same doses as salicylic acid or salicylate of soda, to which the anisate of soda corresponds. At present, however, very little is known with regard to its capabilities as a medicament, but some clinical observations are being made in cases in which the compounds of anisic acid have been administered. It is hoped that they will be found as effective as salicylate of soda without its after effects, or head and cardiac symptoms.

The most interesting case of encysted stone has recently been under the hands of Mr. E. H. Fenwick. The calculus could be felt bi-manually,

and was diagnosed to be hour-glass in shape. The smaller piece was found projecting into the bladder at the level of the left urethral orifice, weighed one ounce and a half, and the larger portion lying in a diverticulum outside the back and base of the bladder; this portion was four ounces and a half in weight, and the size and shape of a large hen's egg. The two portions were connected by a very slender neck. The vesical piece was easily broken off, leaving the neck protruding from the small opening of the diverticulum. The position of the opening rendered much dilatation of it dangerous. It was therefore impossible to extract entire the encystic portion. Attempts to crush it by means of lithotrite or forceps failed. A chisel was then guided through the orifice of the diverticulum and laid upon the stone, elastic counter-pressure was afforded by Petersen's rectal balloon. The stone was then cut through by repeated blows with a mallet. After much careful manipulation, the stone was chiselled into sufficiently small fragments to allow of their being extracted through the orifice. The wound rapidly healed, and in six weeks the patient left Mr. Fenwick perfectly cured.

In the report of the medical officer of Wormwood Scrubs Prison, just published, is given a remarkable case of malingering. A prisoner had, prior to his imprisonment, been for some years considered as quite disabled by a spinal injury, which was an actual fact at first, consequent upon a severe accident. When he was received at Wormwood Scrubs there were features in his case which led the doctor to doubt the genuineness of his then present symptoms, and it was thought that he had recovered from the effects of his original injury to a far greater extent than he was willing to allow. He was, therefore, treated in such a manner as to impress upon his mind the fact that considerable doubt existed as to his real disability to move from his bed. Ultimately finding that few hospital luxuries were given him, after lying in bed as a hopeless paralytic for more than ten weeks in the infirmary, he presented himself at his cell door one morning, having made his bed and put his cell in order. He asked to immediately be let out of the infirmary, and to be allowed to "work like a man," throwing away at the same time with scorn, the surgical support which he had worn day and night for so long a time.

The building of the new chapel, waiting-rooms and lodge in the grounds of the Cremation Society, at Woking, is approaching completion. Fifty-one bodies have already been cremated. The erection of a crematory at Leicester for the Midland Counties is to be considered at a public meeting, and in Glasgow the Scottish Burial Reform and Cremation Society, formed last August, are arranging for the immediate erection of build-

ings, including a chapel and columbarium, on a picturesque site adjoining the cathedral.

The annual course of the Brown Institution lectures will be delivered by Mr. Victor Horsley, at the University of London, on the subject of "Epilepsy."

From some recent experiments it appears that digestion is retarded from about half to two and a half per cent. by pepper, whilst mustard has either no action whatever upon the gastric functions, or but very slightly accelerates them.

G. O. M.

SOME PARIS CLINICS.

(FROM OUR SPECIAL CORRESPONDENT.)

Apostoli's Clinic—Verneuil's Clinic—Charcot's Clinic—Therapeutic Notes.

Dr. Apostoli has a clinic for diseases of women, with special reference to the treatment of such conditions with electricity, on Monday, Thursday and Saturday, at half-past two, Rue du Jour, No. 19. I consider this to be, in many particulars, the best gynecological clinic in Europe, either: 1st. For those who wish to examine a great variety of rare as well as of ordinary cases; 2d. For those who wish to study intelligently and honestly recent methods in conservatism.

Those who have raised objections to his method have done so, 1st, from theoretic reasoning; 2d, from a want of success, due probably to a want of exactness in following out necessary directions. A man is apt to believe the evidence of his own eyes, and the testimony of a multitude of reliable witnesses can be disputed only upon the ground of defective eye-sight, defective diagnosis, defective balancing of *post hoc* and *propter hoc*, or of illogical deductions of enthusiasm. Even the most bitter agnostic, be he honest and well-balanced, would hardly ascribe this congregation of psychoses to a group, however justly they might apply to an individual. Theoretical fancies, in the face of clinical facts to which they oppose themselves, can carry no force. Such theories have concerned themselves chiefly with *immediate* electro-chemical action, forgetting the *continued* intra-polar molecular action, which is the important factor of all electrization.

This is what the gynecologist aims at in the galvanic treatment, and galvano-caustic treatment of myoma. He does not expect as much from the immediate puncture as he does from the effect upon the molecules between the poles—the inter-polar zone—which effect is progressive. The advance of a great science cannot be arrested by a doubtful smile. If it be of value, it will pass onward and upward, even if it should do so over a multitude of dead opinions and languishing individualisms.

Ovarian pain, generally hysterical, pain con-

fined to the ovary and not experienced elsewhere. This is treated with the bi-polar Faradic current, generated from a *fine* wire battery, which gives a higher tension. The rubber cone, about as large as a Simpson's uterine sound, tipped at the point with platinum, holds both the positive and negative poles, to which the currents are carried through a square base. Such cases as these always profit immediately by the application. It soothes the pain at once. The question I raised with Dr. Apostoli was, whether such an isolated pain might not be the evidence of a generally unstable psychic condition which could be met more intelligently by constitutional treatment; whether such pain, though felt in the ovary, might not be due to a disturbance of the higher centres—a misinterpreted pain, so to speak—since absolute pain of an organ could only really exist with actual disease. That Faradism for a reflected neurosis could not be permanent, unless the condition *reflecting* it, could also be reached and benefited. However, apart, from such metaphysical reasoning, uterine bi-polar Faradism *always* arrests the pain.

Hæmorrhage from Tumors.—Apostoli has not failed in a single instance, during my term of observation, in perfectly arresting these blood-losses after one, two, three or more sittings. I have seen him carry the current to 150 or 200 milliamperes, the positive *carbon* point in the uterus, the negative attached to a belly-pad of potter's clay. I have not seen a woman complain of anything more than a slight uneasiness, though a current of 200 milliamperes was used. A sitting lasts ten or fifteen minutes, and the carbon electrode is withdrawn from the fundus toward the cervix, so as to include, as far as possible, the whole interior surface of the uterus. There are certain cases where the negative pole is used within the uterus, in order to get primarily a *destructive*, and secondarily a *ciatricial* effect. If it shall be demonstrated beyond all question of reasonable doubt that the clinical symptomatology of myoma ceases to become prominent after the application of galvanism, without endangering life, we have reached a plane of scientific progress higher than that occupied by the laparotomist; and I can conceive of no necessity for the dangerous operation, if there be no discomfort from the tumor.

Salpingitis.—I have seen three cases of catarrhal (?) salpingitis, and two of gonorrhœal salpingitis, very happily treated with galvanopuncture. One case I saw who bore a child after being treated by Apostoli for a number of months for a salpingitis.

Other Conditions.—A woman came into the clinic the other day, with a tremendous peri- and parametritis filling up the fornices, and due to a specific salpingitis. In acute perimetritis Apostoli does not hesitate to use Faradism in the uterus, but he does it with the greatest care possible.

In this case, owing to the purulent discharge, he used the galvanic current, + pole in the uterus, and a current of 100 milliamperes, which the patient bore well. Later he uses galvanopuncture. The case is a grave one. The bugbears of gynecology, chronic para- and perimetritis, are admirably conquered by from 50 to 150 milliamperes of galvanism. I saw Engelmann over and over again relieve such cases in Berlin.

Verneuil's Clinic.—A man came into La Pitié whose index finger had been torn off by a machine just above the first phalanx. The whole hand was kept constantly immersed in a large basin of 2 per cent. carbolized water. Nothing more. Professor Verneuil said, that during his practice of over forty years, he had only amputated a finger in perhaps four instances, because he considered it exceedingly bad practice. These cases all did well when treated by the antiseptic bath; and that it was not good surgery to amputate in these cases of suppuration. He also demonstrated a man, whose prostate he had *scraped* for tuberculous disease, and who was doing well. Another most instructive case, was one in which a man was unable to swallow by reason of œsophageal constriction, but who was fed through the nares, by means of a very ingenious tube. This same arrangement he proposes trying on a man whose tongue he will extirpate for cancer in a few days. Operate early, operate largely, take out all suspected material and feed intelligently, are the points upon which he insisted, as he lectured upon cancerous disease of the tongue. Professor Verneuil offers the following conclusions as to the transmission among men of tetanus:

1. Human communicability is not substantiated by a sufficient number of cases.
2. If transmission does not seem to depend upon the atmosphere, but upon contact, direct or indirect.
3. We have no decided case of record to bear out the theory of immediate contagion, many clinical observations attest the truth of the second, or indirect form.
4. It is very difficult to trace the route through which the contagion has been carried from the first case to others.
5. It behoves us to study with patience this question so pregnant with importance.

Charcot's Clinic.—Professor Charcot has a clinic at nine o'clock, Tuesday and Saturday at La Salpêtrière. On Tuesday he lectures upon a given case, and upon Saturday the wards are visited. Whatever opinion we may have as to the permanent value of Charcot's work two facts are indisputable: 1. The large intelligence and thorough mental equipment of the man. 2. The number of rare cases. These cases are rarely seen outside of La Salpêtrière, for some reason unknown, and which Charcot himself, only a day or two ago,

said was to him an enigma. But apart from the hystero-epileptics, there came here cases of the largest possible interest to the neurologist. I have listened to two conferences, one on *homonymous hemiplegia* and *crosses amblyopia*, and the other in *left-sided sciatica*, and I was greatly struck both by the originality displayed by the Professor in illustrating the cases, by his acuteness of diagnosis, and by the large scope of his research. Incidentally, he alluded to the operation of oöphorectomy for the alleviation of hysterical symptoms, and I was glad to find myself sustained in the point I raised at the 9th International Congress, that such operative procedures were irrational, based neither upon sound physiology or pathology, by a man of such eminence. What neurologist is great enough to diagnose peripheral ovarium hysteria, with derangement of the brain, when neither before the operation, nor after the extirpation of the ovary, nor perhaps after death from the operation, can the microscope discover any pathological lesion? What is the primary lesion? Is it not much more natural to suppose that the mischief is in a higher ganglia, and that the ovary suffers only as a reflex periphery.

Therapeutic Notes.—M. Constantin Paul is using saccharin in solutions of 1:250 and 1:500 as an antiseptic dressing in diseases of the eye. Dr. Rovighi, of Bologna, is advocating the use of *strophanthus* as an antipyretic. In four cases of consumption he reduced the temperature 2° to 3° . Dr. M. R. Cholewa treats coryza with an oily solution of menthol, 20 parts to 100. M. Henocque denies the activity of antipyrin and of acetanilide in the reduction of oxyhemoglobin. He is now experimenting with phenacetin. H. R. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Sudden Heart-Failure in Diphtheria.

Dr. J. Lewis Smith read at the first meeting of the Academy of Medicine in November, an admirable paper on "Sudden Heart-Failure in Diphtheria." Towards the close of his paper he examined by the light of clinical experience the prevailing theory that diphtheritic paralysis results from anatomical changes, peripheral or central, or both, in the nervous system, and to inquire whether it was adequate to explain the paralysis as it ordinarily occurs—whether cardiac paralysis or the other forms. The following he gave as some of the objections to it:

1. Cases occur in which carefully conducted microscopic examinations reveal an apparently normal state of the nerves supplying the paralyzed part and of that part of the cerebro-spinal axis from which the nerves arise.

2. Palatal paralysis sometimes occurs as early as the second or third day of diphtheria, and loss of the tendon reflexes as early as the first day; and it seems improbable that a peripheral neuritis or anatomical changes in the cerebro-spinal axis such as to cause paralysis should occur at so early a date.

3. In its commencement diphtheritic paralysis often exhibits what Trousseau designates as mutability; suddenly shifting from one group of muscles to another. It would seem impossible that there should be a sudden recovery from the paralysis, and then perhaps on the following day a recurrence of it, if it resulted from degenerative nerve changes, either central or peripheric. A persistent cause should produce a continuous effect.

4. Microscopists who have discovered degenerative changes in the peripheral nerves supplying paralyzed muscles, state that while some of the nerve-fibres have undergone complete or nearly complete degeneration, others have been affected with only partial degeneration, and still others seem to be intact; a condition which would hardly account for the complete paralysis often met with, as, for instance, in the velum palati.

5. Diphtheritic paralysis, both motor and sensory, is frequently limited to the parts supplied by a single branch of a nerve, while all the other branches preserve their normal function. This fact, while not antagonistic to the theory that peripheral nerve lesions cause the paralysis, affords a strong, if not conclusive, argument against the theory that central nerve lesions are the cause.

In the discussion on the paper Dr. A. L. Loomis said that he had been accustomed to regard diphtheritic paralysis and heart-failure as not always dependent on the same cause. In the early stages of diphtheria it had seemed to him that heart-failure was due to the direct action of the poison, whatever that might be, as was no doubt the case in other diseases, especially typhus fever, in which sudden death not infrequently occurred from this cause. When the accident occurred in the advanced stages of diphtheria he had considered that it was caused by peripheral neuritis, although he did not deny that there was possibly not a sufficient basis for such an assumption.

Dr. Beverley Robinson said that he was still of the opinion that cardiac failure in acute cases, in the majority of instances, was connected with the ante-mortem formation of clots in the heart, especially the right heart. When a hospital interne in Paris, he had made a large number of autopsies in such cases, and he had never found any lesions of the peripheric nerves. In his experience death did not always occur rapidly; the symptoms of heart-failure often continuing for a considerable time before the fatal termination. After death there would almost invariably be found fibrinous clots, and from their character he

believed that they were formed ante-mortem, and were to a greater or less extent the cause of death.

Dr. A. Caillé spoke of the importance of keeping all patients suffering from diphtheria, strictly confined to bed, and of giving them sufficient stimulus, for the purpose of counteracting, as far as possible, the tendency to heart-failure. He also mentioned one case in which fatal heart-failure was apparently brought about by an error in diet.

Dr. Seibert expressed the opinion that heart-failure occurring in the early stages of diphtheria was due to the direct action of the poison of the disease upon the central nervous system, and that when it developed later on it was due to pathological changes in the cardiac muscles. In all the cases that he had known of, the attack was brought on by the attempt of the patient to make some exertion.

Dr. A. Jacobi said that it was probable that some of the sudden deaths in diphtheria were due to syncope, the result of anæmia of the brain brought about by exertion, as was sometimes the case in pneumonia. There was one peculiar condition that might be mistaken for heart-failure in the later stages of diphtheria, viz.: paralysis of the muscles of respiration. It usually followed the other forms of paralysis, and was characterized by shallow respiration, with a good deal of resulting dyspnoea and rapidity of the heart's action. In such cases electricity in short sittings, and strychnia by hypodermic injection, are the most efficient means of treatment. Being aware of the tendency to fatal heart-failure in diphtheria, it was the duty of the physician in every case of the disease to do all in his power to guard against such an accident. The indications are to save the strength of the patient by feeding and tonics, and especially to fortify the heart by means of alcohol and such agents as digitalis, spartaine and strophanthus. In every case of diphtheria we had to deal with sepsis, and alcohol was therefore of the highest possible value. He believed that no patient with this disease could be injured by alcohol, and that even the most courageous physicians often erred in not giving enough of it. If the choice were offered him between alcohol and all other remedies in diphtheria, Dr. Jacobi said he would unhesitatingly select the former as affording the best chance to the patient. In brief, then, the indications for the prevention of heart-failure are to save the strength, combat sepsis, and sustain the heart.

In closing the discussion Dr. Smith said that, since the stomach and lungs, as well as the heart, were implicated, the inference was that the cause of the trouble was some affection of the nerve supplying the three organs, the pneumogastric. It was a fact that a certain proportion of those attacked with heart-failure recovered, and that in some of those who died there was for a time an

amelioration of the symptoms; and it seemed to him that this would not be possible if the trouble were due to heart-clot, which would undoubtedly be a permanent condition, unaffected by any treatment that might be adopted. It was also a fact that paralysis of some form almost invariably preceded the heart-failure, and this would seem to indicate that the latter was due to the same cause as the paralysis.

P. B. P.

Spontaneous Paracentesis Abdominis at Umbilicus, in Anæmic Ascites.

WITH LARGE MULTINODULAR FIBROID TUMOR OF UTERUS.

Dear Sir:—Never having met with a recorded case of the above complication, I present a report of the same, owing to its extraordinary rarity. Several years since, I attended Mrs. — for metrorrhagia, coincident with the development a large fibroid tumor of the uterus. Her general condition consequently was not good, yet she could exercise and had a fair appetite. Later, her circulation became impoverished, resulting in general anæmia, some anasarca, with ascitic accumulation, ultimating in an immense circumference or rotundity. This condition has existed for several months. She looks cadaverous, yet has a voracious appetite. Dyspnoea and the usual concomitant of such a state of health, are present, not to an intolerable extent however. On August 5, I was summoned to attend her. I examined the abdomen. I found the umbilicus protuberant, of six inches in diameter, similar to *hernia umbilicalis* (yet there was no hernia), only the dropsical infiltration, which had found an outlet through the parietes of the umbilicus, sufficiently large to admit the exit of a drop of the fluid which continued to drop, guttatim. Nothing was to be done, hence I advised non-interference. Drainage would continue to the level of the orifice, and possibly closure would be effected, yet the enfeebled structure would give away under the heavy recurrent pressure. Considering the adhesions existing between the tumor and the peritoneum, and the self-evident malignancy of the same, extirpation could not be entertained; hence, she will be compelled to endure the same until death comes to her relief.

GEO. N. MONETTE, M.D.

17 Prytania St., New Orleans.

"What is the Matter with the Candle Test of the Visual Field?"

Dear Sir:—It seems hardly right to be making a fuss over anything so presumably well-known and generally used as the candle test of the visual field. But Dr. Cheatham's pertinent query (JOURNAL, November 17) in connection

with Dr. Chisolms' report can, I regret to say, be applied to other cataract operations—as in the following instance:

In some years past I have had under observation a patient (senile) who had chorio-retinitis in the left eye and steady maturing cataract in the right. Recently the cataract became fully matured and the question arose as to an operation. The chorio-retinitis in the left eye had been for some time at a standstill and there was fair eccentric vision sufficient for getting about, self-help at the table, etc., but not for reading or writing with any satisfaction. My patient was naturally not content in this condition and hoped for relief (at least to the extent of reading coarse print) through a successful extraction of the cataract in the other eye. I therefore made a careful examination by the candle test and finding that the light was *not* quickly perceived and located (particularly at the center of the field) I was compelled to give it as my opinion that a successful extraction would not restore the reading power or much improve vision generally.

Later on my patient visited a neighboring city, was there given a more favorable prognosis, and submitted to the operation. The operation was neatly done and the healing normal. The patient returned home some weeks later, but after the lapse of several months the power to read had not returned, nor is it now expected. In the region of the macula, easily discernible with the ophthalmoscope through the unobstructed pupil is a large white patch (atrophy) similar to the one in the left eye, and whose presence I from the first suspected, through the failure to stand the candle test.

Dr. Cheatham's communication seems not to have been ill-timed. Respectfully yours,

H. B. YOUNG, M.D.

304 N. 3d St., Burlington, Ia., Nov. 19, 1888.

BOOK REVIEWS.

Second Annual Report of the STATE BOARD OF HEALTH AND VITAL STATISTICS OF PENNSYLVANIA, Transmitted to the Governor, Dec. 1, 1886. 8vo., pp. vi, 1056. Harrisburg: Erwin K. Meyers, State Printer. 1887.

As may be seen from the dates in the above title, the *accouchement* of the bodies politic that gave birth to this volume was perhaps painful and certainly protracted. The report embraces the operations of the Board for one year, and it has taken almost two years to get it from the Secretary, through the Governor, Legislature, and State Printer, to our desk. A note to the title page explains that "legislative permission for the printing of this report was not accorded until near

the close of the session of 1887. Thus it has required about a year to get the volume through the State Printing Circumlocution Office. May we not hope that the report for the year 1888 will be ready for exhibition at the time of the fourth centennial of the discovery of America—1892?

Part I of the volume (44 pages) contains the minutes of the Board. Part II is in the form of appendices, reports of standing committees, on Sanitary Condition of Cities and Towns, on Epidemics and Special Sources of Disease, of Inspections, of Quarantine and Disinfection, Proceedings and Papers of the State Sanitary Convention, Geographical Distribution of Consumption of Lungs and Malarial Diseases, by Dr. William Pepper, Legal Opinions and Legal Proceedings, Compendium of Laws relating to Public Health and Safety of Pennsylvania, and Decisions relating thereto, Sanitary Conferences, etc. This is scarcely more than a meagre synopsis of the table of contents.

As may be found in almost any report of this kind, there are plenty of texts for homilies on the penny wisdom pound foolishness of legislative bodies. The report of the Committee on Registration and Vital Statistics shows that the legislature failed to make reports on vital statistics compulsory, and that no provision was made for meeting the expenses of reporting to the Board. The report of the Committee on Water-supply and Drainage, Mr. Rudolph Hering, Chairman, is very full. The report on Public Institutions and School Hygiene contains a very suggestive and practical paper on alms house construction, by Dr. R. Lowry Sibbett, of Carlisle. Legislative weakness is again shown in the report of the Committee on Adulterations, Poisons, etc., the funds supplied the Board being insufficient to permit of any amount of work being done in regard to these matters.

The reports on the sanitary condition of cities and towns cover Towanda, Altoona, Bethlehem, drowned lands in Luzerne Co., Allentown, Bristol, Blairsville, and Johnstown. We are glad to see that Dr. Germer calls attention to the polluted drinking water on board passenger cars. There is absolutely no excuse for this, and we hope that some of our legislative bodies will come to their senses long enough to correct this evil.

The reports on Epidemics and Special Sources of Disease include reports on a fatal outbreak of trichiniasis at Bethlehem, and several outbreaks of smallpox and typhoid fever. The reports on Inspections cover a large number of places. Under reports on Quarantine and Disinfection is a report on Japanese rags; and one on the quarantine of smallpox in the Port of Philadelphia, by Dr. Benjamin Lee, Secretary of the Board.

At the sanitary convention held at Philadelphia in May, 1886, thirty-two papers were read, all of which are printed, and we fear buried, in this re-

port. We would call the attention of the Pennsylvania Board to the manner in which proceedings of sanitary conventions in Michigan are printed by the Health Board of that State. For aught we remember to the contrary, the proceedings of this convention may have been published separately; but memory is sometimes a little clouded in regard to historical events. These papers, which cover more than 200 pages are too valuable to be buried in a large, not generally accessible report, as is the case with Dr. Pepper's masterly contribution to the "Geographical Distribution of Consumption of the Lungs and Malarial Disease in the State of Pennsylvania." This, however, has been issued in separate reprint.

For reference the "Compendium of the Laws relating to Public Health and Safety of the State of Pennsylvania, together with decisions of the Supreme Court and County Courts relating thereto" is very valuable. Another appendix contains correspondence relative to regulations for the transportation of dead bodies in the different States of the Union.

Taken altogether, this report is a most creditable one. The Pennsylvania Board, like almost every other Board that has no money for purchasing legislative influence, has been hampered by legislative restrictions and inactions. Scarcely had it begun its work before it was called upon to show cause for its establishment. The present volume is an answer to that question, and a complete answer; and we venture the assertion that if the people of the State of Pennsylvania have any cause for complaint, they must find fault with their representatives in the State Legislature. So far as we can see the Board has done its duty to the best of its ability. We hope that the report for 1887 will appear before the last quarter of 1889.

The Physician's Leisure Library. THE THEORY AND PRACTICE OF THE OPHTHALMOSCOPE.

By J. HERBERT CLAIBORNE, Jr., M.D. Detroit: Geo. S. Davis. 1888. Chicago: W. T. Keener.

Dr. Claiborne's little book consists of eight chapters; the first three are devoted to the principles of optics as a preface to the better understanding of the scientific use of the ophthalmoscope. The other chapters treat of the construction of the instrument, its use by the direct and indirect methods, the detection of anomalies of refraction, and the normal and pathological state of the eye. Much attention is devoted to the vessel and shadow test. The latter method is generally employed in England, and according to the author's opinion should receive more recognition in our own country. The work is clear concise and practical. It contains a great deal of information. It is formulated in such a manner as to prove a guide and instructor to the student while examining the patient.

MISCELLANEOUS.

TO MEDICAL MICROSCOPISTS.—In behalf of the "American Association for the Study and Cure of Inebriety" the sum of one hundred dollars is offered by Dr. L. D. Mason, Vice-President of the Society, for the best original essay on "The Pathological Lesions of Chronic Alcoholism Capable of Microscopic Demonstration." The essay is to be accompanied by carefully prepared microscopic slides, which are to demonstrate clearly and satisfactorily the pathological conditions which the essay considers. Conclusions resulting from experiments on animals will be admissible. Accurate drawings or micro-photographs of the slides are desired. The essay, microscopic slides, drawings or micro-photographs are to be marked with a private motto or legend and sent to the Chairman of the Committee on or before Oct. 1, 1890. The object of the essay will be to demonstrate: *First*, Are there pathological lesions due to chronic alcoholism? *Secondly*, Are these lesions peculiar or not to chronic alcoholism? The microscopic specimens should be accompanied by an authentic alcoholic history, and other complications, as syphilis, should be excluded. The successful author will be promptly notified of his success, and asked to read and demonstrate his essay personally or by proxy, at a regular or special meeting of the Medical Microscopical Society, of Brooklyn. The essay will then be published in the ensuing number of *The Journal of Inebriety* (T. D. Crothers, Hartford, Conn.) as the prize essay, and then returned to the author for further publication or such use as he may desire. The following gentlemen have consented to act as a Committee: Chairman, W. H. Bates, M.D., F.R.M.S., Lond., Eng., (President Medical Microscopical Society, Brooklyn), 175 Remsen St., Brooklyn, N.Y.; John E. Weeks, M.D., 43 West 18th St., New York; Richmond Lennox, M.D., 164 Montague St., Brooklyn, N. Y.

IMMIGRANT INSANE.—During October, 1888, among the insane taken charge of by Cook County, Ill., were the following: James Dargan, who left Ireland four months before, and was brought to America by his sister, after being discharged from the Irish police force on account of insanity; James Spain, three months from Ireland; Caroline Sauritzen, three months from Germany; Charles Koch, six months from Germany; Hannah O'Sullivan, residence Dublin, Ireland, but a few months in America. All these were, as far as could be ascertained, insane before coming to this country. The total contribution of insane paupers from Europe to Cook County amounts to fifty for this year alone. If the other principal cities of the United States are as generously treated by foreign governments we will be able to close all their asylums and poorhouses in a few years, and by making aldermen and county commissioners of foreign criminals their penitentiaries will be emptied into American political offices.—*America*.

PHYSIOLOGICAL MARRIAGE.—Taking part in the discussion of the "Matrimonial Question," which has become epidemic throughout the British Isles, even to the abatement of Irish grievances, the *British Medical Journal* remarks that "the remedy (for unhappy marriages) seems to us to lie not in weakening the stringency of the bond, but in providing that it shall be entered into with an adequate knowledge of all the conditions attached to it and willingness to submit to them. For this some amount of physiological teaching is indispensable, and there need be no difficulty in imparting it without the slightest danger to innocent minds. We are firmly convinced that, if unions were arranged in accordance with well understood scientific principles more often than they now are, we should hear less of the unhappiness or 'failure' of marriage."

LARD ADULTERATION.—The National Board of Trade has expressed itself pretty strongly on the subject of lard adulteration. It has adopted a preamble and resolutions proposed by the Chicago Board of Trade declaring that "large quantities of a compound made from the fats of various animals and vegetables" are "placed on the home market, shipped abroad, and branded as lard." It also expresses a fear that this practice may enable foreign refiners to induce the Governments of France and Germany to prohibit the importation of all American lard, "thus damaging our export trade and diminishing the consumption of honest lard at home, to the financial detriment of the agricultural interests of this country, which to-day own about 50,000,000 hogs, worth \$300,000,000, and further damaging America's good name in the commerce of the world."

When the statement that a compound made from the fats of "various animals and vegetables" is extensively made in this country, and exported as lard, is put forth with the sanction of the Chicago Board of Trade, it is likely to be believed, and it would not be very surprising if it should precipitate that action on the part of foreign Governments which the Board professes to fear. Foreign refiners can now go to their Governments armed with the preamble and resolutions adopted by the National Board and say: "Here we have an admission by the highest American authority in such matters that the stuff sent over here from America and sold as lard is a vile compound of the fats of we know not what animals—dogs and cats, it may be—and vegetable oils of which we are equally ignorant. Ought you not, therefore, to protect the public health by excluding all packages represented as containing lard coming from America?" Governments which have shown their willingness to seize upon any pretext for the exclusion of American products may not be disposed to resist an appeal so fortified.

The remedy proposed by the Board is the enactment of such laws and regulations by Congress as will compel all dealers and refiners to brand all adulterated lard as "compound lard," or in some way which will clearly distinguish the impure from the pure article. It is undoubtedly the right remedy, but it may come too late. At all events Congress ought to provide it without delay. It might have been better for the Board to adopt a recommendation in regard to adulterations generally and send a committee to Washington to represent to Congress the urgent need of prompt action in regard to lard, without putting forth a statement concerning adulterations which may do much harm before the proposed remedy can be adopted.—*Chicago Herald*.

HEALTH OF THE DISTRICT OF COLUMBIA.—Health Officer Townshend, in his annual report to the Commissioners for the last fiscal year, says the general health of Washington remains unimpaired, and the community has good reason to congratulate itself upon existing conditions. The total number of deaths was 5,040, of which 2,778 were white and 2,262 were colored persons. The mean average death-rate of the total population for thirteen years was 23.88 per 1,000, per annum, while for last year it was 22.40. The death-rate of the white population was 18.52, and for the colored, 30.16 per 1,000, per annum. The population upon which the death-rate is estimated is 225,000 souls, 150,000 white and 75,000 colored. There are 426 nuisances accredited to "ashes." He reiterates his recommendation for the removal of ashes at public expense. He considers the necessity for this paramount. He estimates that it would cost \$25,000 per annum. The Inspector of Plumbing regrets that Congress has not yet authorized the inspection of the plumbing in all houses used as dwellings. "Many of our public buildings are unsafe on account of unsanitary plumbing," says the Inspector, "and only occupied at the imminent risk of health and life."

Attention is called to the necessity for proper appliances for disinfecting bedding, clothing, etc. A general

revaccination is suggested, in order that the unprotected may be protected in the event of small-pox being introduced into our midst. This disease, though reported in twenty-one States in the last six months, has not gained an entrance into the District. Regarding the disposal of the dead, he says: In several of my reports I have called attention to the subject of the disposal of the dead, and I desire to reiterate, in terms as strong as possible, that, in my opinion, the time has well nigh arrived when this subject must be taken into earnest consideration. The days for cemeteries are passing rapidly by, and I believe ere long the few crematories which have been established in the United States will be largely multiplied.

He recommends the appointment of a chemist, an increased clerical force for his office, a larger appropriation for the removal of garbage, the establishment of a city wharf, arching of James Creek Canal, and the granting of marriage licenses put under the Health Office.

A BUREAU OF HEALTH.—Senator Gibson introduced a bill in the Senate, on Dec. 4, for the establishment in the Interior Department of a Bureau of Health, to be under the direction of a Commissioner, who shall receive a salary of \$5,000 per annum. It also provides for the appointment by the President of a Health Commission, to be composed of twenty members, who shall be divided into six sections, as follows: Five for the yellow-fever section and three each for the cholera, typhoid fever, scarlet fever, small-pox, and diphtheria sections. Each member of the commission shall receive an annual salary of \$1,200, and it shall be his duty to investigate the cause, origin, and best mode of prevention of the diseases mentioned. Five members of the commission shall be organized into a quarantine commission, whose duty it shall be to examine into and report upon the efficacy of the quarantines at the various seaports of the United States. Upon the report of the commission to the Health Commissioner that the quarantine service at any port is inefficient the Commissioner is commanded to direct the Collector of Customs at the port to refuse entry to any vessels, goods, or persons coming from any infected place unless the vessel shall have undergone quarantine at some National quarantine station. The Health Commissioner is directed, whenever called on by the Governor of a State, to make rules and regulations and take measures for the suppression of any infectious disease. It is made the duty of Consular officers to make weekly reports to the Health Commissioner in regard to the sanitary condition of foreign ports. It is made unlawful for any person to obstruct commerce between the States or with any foreign country except in accordance with the rules prescribed by the Health Commissioner. An appropriation of \$75,000 is made for the expenses of the bureau annually, and an appropriation of \$500,000 is made to be drawn upon whenever necessary for the suppression of any contagious or infectious diseases.

THE ST CHARLES CO., MO., MEDICAL SOCIETY held one of the most interesting meetings, on November 20, in the history of the organization. Every section of the county was represented. In the afternoon the aged Dr. John A. Talley, of Wenzville, the retiring President of the Society, delivered his annual address. He condemned the theory of permitting nature to take its course in many cases, and said doctors did not disagree as often as popular opinion gave them credit for. Dr. Bruere read a paper on "Measles and its Complications." Dr. H. H. Vinke read a paper on "Cerebral Tumors and Abscesses." Discussions and the presentations of individual cases followed. After adjournment a visit was paid to the County Asylum, and the institution, together with the new insane department, was inspected. The next meeting will be held in St. Charles on the first Tuesday in February.

SANITARY CONDITION OF PENNSYLVANIA COAL MINES.

—A correspondent of the Chicago *Herald* says: One cannot but be struck with the poor condition of these mines, both as to ventilation and roof supports. The first is insufficient, and the last is criminally absent in so many cases that death from a "falling roof" has become alarmingly common. Both ventilation and roof support cost the mine-owners considerable, and, upon the principle that pervades all their mines, expenses are kept at the lowest notch, in order that the profits may reach the highest. As a consequence the mines are little more than half ventilated, and less than half supported by the necessary pillars to prevent the slate roof from falling upon the unfortunate workmen. Hence it is that the miners' hospital here is nearly always crowded, and the Potter's Field is every day extending its borders.

CONVICTION OF AN ILLEGAL PRACTITIONER.—In New York last week Francisca Ritch was sentenced by Recorder Smyth, for the unlawful practice of medicine, to 100 days' imprisonment in the penitentiary and the payment of a fine of \$100. The delinquent has had a large practice among women for many years, and this is her second conviction. Were it not for the pernicious influence of such a sentence, it would be ridiculous, but considering the amount of evil a malpractitioner causes, there can be no excuse for administering such a light sentence. Ten years in the penitentiary should be the lightest punishment for such an offense.—*America*.

NOTICE.—Those parties who answered the advertisement of Dr. E. A. Waggener, Carrollton, Mo., which appeared in THE JOURNAL of Nov. 24, will please repeat their answers to him, as the whole of their letters were destroyed by accident, thus leaving him without their addresses.

A CAUSE OF LUNACY.—Mr. Baron Huddleston's latest *obiter dictum* is not bad. "Such was the intricacy of the lunacy laws," said his lordship, "that they had a tendency to reduce persons who gave an abstruse study to them into persons for whose benefit they were intended."

NEW HOSPITAL AT TACOMA.—Plans for the new hospital are nearly completed, and excavating for the foundation will commence in a few days. The building will be a handsome one, and will cost \$15,000.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from November 24, 1888, to November 30, 1888.

Major Ely McClellan, Surgeon, having reported to the Division commander, on the 23d inst., as required in par. 15, S. O. 261, c. s., A. G. O., is assigned to duty as attending surgeon at these headquarters, and as examiner of recruits at Chicago, Ill., from that date. Hdqrs. Div. of the Missouri, Chicago, Ill., November 24, 1888.

Major Henry M. Cronkhite, Surgeon, is granted leave of absence for two months, by direction of the Secretary of War, to take effect upon his being relieved from court-martial duty at Little Rock Bks., Ark. Par. 7, S. O. 276, A. G. O., Washington, November 26, 1888.

Capt. Edward B. Moseley, Asst. Surgeon, leave of absence granted in S. O. 67, November 11, 1888, Div. of the Pacific, is extended three months, by direction of the Secretary of War. Par. 13, S. O. 275, A. G. O., November 24, 1888.

Capt. Robert B. Benham, Asst. Surgeon U. S. A., Ft. Laramie, Wyo., is hereby granted leave of absence for one month. Par. 1, S. O. 111, Hdqrs. Dept. of the Platte, November 24, 1888.

Capt. John Van R. Hoff, Asst. Surgeon, leave of absence granted in S. O. 134, November 1, 1888, Dept. of the Missouri, is extended one month, by direction of the

Secretary of War. Par. 3, S. O. 274, A. G. O., Washington, November 23, 1888.

Capt. William F. Carter, Asst. Surgeon U. S. Army, is granted leave of absence for one month. Par. 4, S. O. 116, Hdqrs. Dept. of Texas, San Antonio, November 12, 1888.

First Lieut. Paul Clendenin, Asst. Surgeon U. S. Army, is granted leave of absence for one month, to take effect December 4, 1888. Par. 3, S. O. 116, Hdqrs. Dept. of Texas, San Antonio, November 12, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 1, 1888.

Surgeon J. H. Gaines, detached from the "Dolphin" and ordered home.

P. A. Surgeon Frank Henderson, detached from the "Pensacola" and to the "Dolphin."

Surgeon Wm. H. Jones, detached from the "Richmond" and to the "Pensacola."

P. A. Surgeon A. C. H. Russell, detached from the Naval Academy and to the "Wabash."

P. A. Surgeon N. H. Drake, detached from the "St. Mary's" and to the Coast Survey.

P. A. Surgeon H. W. Whitaker, ordered to the nautical school ship "St. Mary's."

P. A. Surgeon D. O. Lewis, detached from the Coast Survey and to the Naval Academy.

Asst. Surgeon A. R. Wentworth, ordered for examination preliminary to promotion.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Five Weeks Ending November 24, 1888.

Surgeon Walter Wyman, from New York, N. Y., to Washington, D. C. November 16, 1888.

Surgeon W. H. Long, from Detroit, Mich., to Cincinnati, O. November 16, 1888.

Surgeon C. S. D. Fessenden, from Norfolk, Va., to Louisville, Ky. November 16, 1888.

Surgeon Geo. Purviance, from Cincinnati, O., to Baltimore, Md. November 16, 1888.

Surgeon H. W. Austin, from Chicago, Ill., to Milwaukee, Wis. November 17, 1888.

Surgeon John Godfrey, from Louisville, Ky., to Milwaukee, Wis. November 14, 1888.

Surgeon John Godfrey, from Louisville, Ky., to New York, N. Y. November 16, 1888.

P. A. Surgeon F. W. Mead, from Baltimore, Md., to Norfolk, Va. November 16, 1888.

P. A. Surgeon John Guitéras, from Camp Perry, Fla., to Charleston, S. C. November 15, 1888.

P. A. Surgeon S. C. Devan, from Savannah, Ga., to Washington, D. C. November 15, 1888.

P. A. Surgeon F. M. Urquhart, from Live Oak, Fla., to Dupont, Ga. November 3, 1888.

P. A. Surgeon S. D. Brooks, from Wilmington, N. C., to Savannah, Ga. November 15, 1888.

Asst. Surgeon J. B. Stoner, from Charleston, S. C., to Wilmington, N. C. November 15, 1888.

Surgeon P. H. Bailhache, granted leave of absence for twenty days. November 24, 1888.

Surgeon W. H. Long, granted leave of absence for sixteen days. November 21, 1888.

Asst. Surgeon W. P. McIntosh, granted leave of absence for thirty days. October 24, 1888.

Asst. Surgeon G. M. Magruder, granted leave of absence for thirty days. November 23, 1888.

Asst. Surgeon J. O. Cobb, granted leave of absence for twenty days. November 20, 1888.

Asst. Surgeon H. D. Geddings, granted leave of absence for thirty days. November 1, 1888.

Surgeons Walter Wyman, H. W. Austin, John Godfrey, representatives at meeting of American Public Health Association.

P. A. Surgeon W. P. McIntosh, promoted and appointed P. A. Surgeon November 21, 1888.

THE Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, DECEMBER 15, 1888.

No. 24.

ORIGINAL ARTICLES.

ETIOLOGY OF THE IRREGULARITIES OF THE TEETH AND JAWS.

ARREST OF DEVELOPMENT OF THE SUPERIOR MAXILLA.

Read in the Section on Dental and Oral Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY E. S. TALBOT, M.D., D.D.S.,
OF CHICAGO, ILL.

The subject of the etiology of irregularities of the teeth is so comprehensive and so replete with points of interest, that it is obviously impossible for one to enter into minutiae within the limits of a single paper. I have therefore deemed it best to prepare a series of papers, in which an attempt will be made to present in an intelligible manner the conclusions formed during an extensive experience in the examination and study of the mouths of strong and well constituted persons, of the mouths of the insane, idiotic, deaf and dumb, and blind, and of models of various deformities of the jaws and teeth. In the present paper—the first of the series—attention will be given to such irregularities as are developed coincidently with the growth of the skeleton; these being, as is well known, chiefly connected with the superior maxilla.

Irregularities of the teeth may be classed as, first: those developed with the formation of the osseous system, and due to constitutional causes; second: those produced by local causes. Irregularities which are inherited, or appear *pari passu* with the development of the osseous system, always take definite shapes and are either the result of arrested development or of inharmonious growth of the maxillary bones. Where arrested development causes deformities they assume the forms known as the saddle- and V-shaped arches, or deformities of a similar character. Where the deformities are due to local influences they may assume any shape or position, the irregularities appearing at or soon after the development of the permanent teeth. English and American authors have spoken of irregularities as congenital, or being of a congenital origin. We can readily understand that the deformity of a single tooth may be congenital, but cannot agree in the classification of an irregularity of several teeth upon

either or both jaws among congenital deformities. Congenital, according to Webster and Quain (whose definitions are generally accepted by medical men), signifies "pertaining to or existing at birth." For instance, cleft palate, hare-lip and spina bifida are congenital deformities, because they exist as entities at birth. The first teeth have not taken positions at birth, and as the permanent teeth do not appear for six years, nor assume any degree of deformity for some years after eruption, general irregularities of the permanent teeth could hardly come under Quain's definition of congenital.

In discussing the subject of irregularities of the teeth it is necessary to commence at the formation of the bones of the skeleton, taking up the different deformities in their natural order, and finishing with the simple irregularities caused by local disturbances. As already indicated, attention will be directed in the present paper chiefly to the subject of those constitutional and hereditary conditions which affect the form of the maxillary bones. The maxillary bones include that part of the upper and lower jaw to which are attached the muscles, and not the alveolar processes, which are for the purpose of retaining the crowns of the teeth while they are forming, and for the retention and support of the teeth after eruption. Anatomists speak of the two portions as one bone, but the growth and functions of the two parts differ so widely that it seems necessary to the orthodontologist to consider them as separate and distinct structures. The lateral halves of the human frame do not always correspond in weight and size. This is true of both external and internal organs. This difference in the contour of both sides of the cranium may be seen in almost every head measure taken by the latter. The feet, hands and limbs will show the same variation in the lateral halves. We should, therefore, be prepared to find not only differences in the upper and lower jaws, but changes in the lateral halves of each bone. This can be shown by taking full and accurate impressions of both jaws and mounting them upon wire articulators. By comparing first the jaws and then the lateral halves we may readily see how much variation exists in the jaw and teeth. These deformities are often so prominent that mechanical interference is necessary to

improve the appearance and the use of the teeth.

We are indebted to Mr. Langdon Down for first calling the attention of the profession to the V-shaped, saddle-shaped, and high arches in connection with the condition of idiocy. Later on, Dr. W. W. Ireland contributed largely towards our knowledge of and interest in these deformities. Both of the gentlemen named are at the head of large English institutions for the feeble-minded, and are devoting their lives to the care and training of these unfortunates. The numerous able papers pertaining to this subject which they have published, bear testimony to their experience and ability in all phases of idiocy. The most remarkable feature of their conclusions, as far as I am able to comprehend them, is their apparent recognition of the frequent existence of the three principal forms of maxillary deformity, and their failure to recognize any other forms of osseous asymmetry and irregularity in the skeletons of idiots. Such a preponderance of maxillary deformities as compared with other osseous tissues in the same class of subjects, is incomprehensible to me, and I find upon investigation that several prominent writers entertain quite different views. Drs. Kingsley, Stelwagen and White claim that the saddle- and V-shaped jaws and high arches are by no means characteristic deformities of idiots, and that they occur with no greater frequency than in other classes of patients. These authors also fail to note any especial tendency to irregularity and asymmetry of development on the part of the general osseous tissues of idiots.

In extensive personal examinations through various institutions for idiots, deaf and dumb, and blind, the conditions which have been observed may be classified as, first: those which are developed with the growth of the individual and may be properly called constitutional; and second: those produced by local influences. I found not only the three principal deformities of the jaws, but other irregularities, to be quite common. Among them were cases of large jaws, protrusion of the upper and lower jaws, high arch, V- and partially V-shaped arches, saddle-shaped arches, small teeth, and arrested development of the jaw bones, especially the superior maxilla. While making these examinations I observed in many of the individuals examined deformities and arrest of development with asymmetry of different members of the body. From these examinations I believe myself warranted in the assertion, that a much larger percentage of deformities of the teeth and jaws exists among a given number of imbeciles, deaf and dumb, and blind, than in the same number of normal individuals; the various conditions being the result either of arrested development, inharmonious development, or excessive growth. When we consider what special conditions constitute the entity termed idiocy, such occurrences are not at all surprising, idiocy being a general

condition. Dr. Shuttleworth has aptly described "idiocy as a vice of the entire organism, an affection not only of the nervous system, but of the functions generally of organic life. Oftentimes the whole bodily conformation bears the impress of idiocy, and not only the lineaments of the face, which by its intelligence should reflect the Divine image, but also the form of the limbs, and especially of that masterpiece of mechanism, the human hand, are sadly marred." By studying the causes and effects of idiocy we may be able to find the relations between it and abnormalities of the maxillary bone. According to one of the best authorities (Dr. W. W. Ireland) "idiocy is mental deficiency or extreme stupidity, depending upon malnutrition or disease of the nerve centres, occurring either before birth, or before the evolution of the mental faculties in childhood." From this definition we see that arrested or imperfect development of nervous tissue may take place either *in utero* or soon after birth, before the organs and tissues are developed perfectly. Such perversions of development do not confine themselves to nerve tissue alone, but may occur in any or all the tissues of the body, having apparently an especial predilection for the osseous system.

It is obvious that any condition of malnutrition, particularly if existing during the period of embryonal and infantile growth and development, which is sufficiently marked to cause perversion of growth in the complex nervous centres, must necessarily affect the tissues in general. Nervous tissues have relatively greater vitality than the other tissues of the body, and every physician knows that the brain and spinal cord will often functionate after the other structures of the body have been seriously impaired by disease. Nowhere in the range of medicine is the old adage of *mens sana in corpore sano* more aptly illustrated than in the general make-up of the idiot. He is an imperfect creation and, as far as my observations go, often thrown together in a manner quite suggestive of the absence of design.

Consanguinity in its Relation to Deformities in General.—Consanguineous marriages not infrequently result in mental aberrations in the progeny. Dr. Howe states that in 17 families the heads of which were related by blood and intermarried, the result was fearful. Most of the parents were intemperate or scrofulous, and some combined both evils, so that it must be admitted that there were other causes to increase the probability of infirm offspring, besides consanguinity. There were born in these families 95 children, of whom 44 were idiots, 12 were scrofulous and puny, one was deaf and one was a dwarf. In some of the families all the children were either idiotic or very scrofulous and puny. In one family of 8 children 5 were idiotic. The commissioners of idiocy in Connecticut found in 160 cases of idiocy 20 which apparently resulted from consanguineous

marriages. Of these 12 were children of first cousins, 3 of second cousins, 1 of third and 4 of distant relations. Dr. Langdon Down found that out of 753 male idiots 33 were the offspring of first cousins, 3 cases of second cousins, and 4 of third cousins; in all 40 cases out of 753, or rather more than 5 per cent. Of the 295 females, 13 were the children of first cousins, 3 of second cousins, and 4 of third cousins; in all 20 among 295, or little less than 7 per cent. His researches show that in England at least every fourteenth idiot is the child of cousins. The majority of cases of idiocy appear at birth, and many such may be traced to habits or tendencies of ancestors. Often it is difficult to determine in what generation the germs of the disease were planted. Ludwig Dahl, of Norway, in his work on insanity, shows by means of a genealogical tree, how an apparently healthy couple may have children, grandchildren, and great-grandchildren affected with idiocy and insanity.

In reviewing the field of possible causes of idiocy, I am greatly impressed by the apparent influence of consanguineous marriages. Dr. S. M. Bemis, of Louisville, Ky., has found through his examination of statistics supplied by a number of physicians, that among 2,778 children, the fruits of intermarriage of first cousins, 793 were normal; 117 deaf and dumb; 63 blind; 231 idiotic; 24 insane; 44 epileptic; 189 scrofulous; 53 deformed; 637 died early.

Scrofula.—The most common lesion accompanying idiocy is some form of scrofula, such as strumous ulcers, skin eruptions, abscesses, enlarged and suppurating glands, diseases of the eye and ear, these diseases being quite general attendants of idiocy. A very large proportion of persons affected with idiocy die of consumption of the lungs, which is of all diseases most often associated with what may be termed a defective make-up. Dr. Ireland says that at least two-thirds of the idiot class are of scrofulous constitutions. "Is arrested development of brain tissue the result of scrofula, or do scrofula and idiocy proceed from a common cause?" is a question often propounded to physicians. In the light of recent observations, I am personally of the opinion that when the two conditions are associated, they are dependent upon a common cause—never, in my opinion, do they bear the relation to each other of cause and effect. The teeth, as we well know, are affected in their development and growth by scrofula and other constitutional defects. The other organs and tissues of the body may not outwardly show such defects as plainly as do the teeth, but the result of any constitutional disease will nevertheless be apt to exist in a form quite as markedly pathological.

Drunkenness in Parents.—There is a wide variance of opinion among medical men, regarding the probable influence of intemperance of parents

in the production of idiocy and allied conditions in their offspring. Dr. Langdon Down is emphatic in his opinion that drunkenness at the time of conception is liable to produce serious results upon the brain of the child. Ludwig Dahl believes that the abuse of brandy in both father and mother is one cause of the large number of idiots in Norway. On the other hand Dr. C. T. Wilber, of the Illinois State Asylum for idiots, states that in 365 idiotic patients 8 only claim drunken parents. Dr. Graham, Superintendent at Earlswood, Eng., also states that he found among 800 inmates of that institution, but 6 cases of idiocy which could be attributed to intemperance of parents. Whether or not drunkenness is responsible for idiocy we cannot decide, but we know positively that intemperate habits are transmitted from generation to generation, each series of progeny in the line of descent showing a lower grade of intellect. As an illustration of the probable influence of intemperance, I cannot do better than quote Dr. Shuttleworth. Considering the intimate and prolonged dependence of the child upon the mother during gestation and nursing, one would suppose *a priori* that maternal rather than paternal drunkenness would count most in production of idiocy.

In the cases which I have tabulated, drunken fathers preponderate in a majority of 13 to 4. Possibly the mental anxiety entailed upon the wife by a drunken husband during the impressionable period of pregnancy may in part explain the discrepancy. Whatever the direct effect of drink upon the fœtus *in utero*, there is little doubt that such nursing as a child is likely to obtain from a drunken mother will intensify any predisposition to mental defect. The baneful practice of giving infants alcoholic drinks seems to prevail to a great extent in Sweden and Norway. Such practice may in part account for the extensive prevalence of idiocy and juvenile insanity in Scandinavia as described by Ludwig Dahl.

Prenatal Influence and Intra-uterine Education.—It is unquestionably a fact that a fright to the mother during pregnancy is occasionally a cause of idiocy in children. Women instinctively shrink from anything which would produce a shock or special mental impression during the period of gestation, fearing for both the mental and physical welfare of the child. Strange to say, the same maternal instinct prevails with the brute creation. Dr. G. H. Fisher has written a complete history of the "Literature, Classification and Description of Human and Brute Monstrosities," including the so-called Parasitic Monster known as "Fœtus in Fœtu," and the various supernumerary formations of parts and organs which are familiar to medical men.¹

¹ "Many interesting cases are given by this author, including deformities of the upper and lower extremities and internal organs. He states positively that the lower animals may become insane.

The result of the various lesions and pre-natal impressions already mentioned is not only mental in character, but we invariably find arrest of development of brain substance in idiots, imbeciles and feeble-minded children, the different terms indicating the degree of mental development. It is to be observed that a majority of these cases are affected by impressions made upon the fœtus *in utero* through the influence of the parents. A few cases, however, are mentioned as resulting from diseases or injuries occurring soon after birth, or in childhood. If arrest of development of brain tissue occurs *in utero*, or in early childhood, other organs or tissues of the body are likely to be similarly affected. The brain of the idiot is lighter and has fewer convolutions than the normal brain, and also differs in that the convolutions of the idiot's brain correspond on both sides, like the monkey's, while they vary in the normal human brain. The anterior lobes of the cerebral hemispheres are imperfectly developed, and where the head is unusually small the antero-posterior diameter of the cerebral hemispheres is shortened. Irregularity of the two halves of the brain is quite commonly observed.

The cerebellum, pons Varolii, and medulla oblongata, are smaller than normal with almost perfect asymmetry. Not infrequently portions of the brain are altogether absent. Absence of the entire cerebellum and a rudimentary condition of one or both obliary bodies, peduncles, optichthalmi and corpora striata having been noticed. Griesinger, in his work on mental diseases, mentions a number of interesting cases, one of which we will cite. The brain examined was that of a girl 17 years of age, who presented the highest type of idiocy, in conjunction with a generally defective physique. The conditions present were very interesting and may be briefly described as follows: The middle free portion of the corpus collosum was entirely absent, as were also apparently the septum and the middle portion of the fornix. The anterior and white commissures of the gyrus fornicatus were decidedly rudimentary. The convolutions presented an abnormal grouping and the Island of Reil was greatly atrophied. Some of the convolutions were entirely absent. The lobes of the cerebellum were asymmetrical.

Dr. A. Wilmarth, of the Penn. Institute of Feeble-Minded Children, says: "In six brains the Island of Reil was exposed through the defec-

tive development of the third frontal convolution; in four cases on two side, in two on one side only. In 18 brains 6 were found where the cerebrum failed to cover the cerebellum from one-eighth to five-eighths of an inch."

I could quote indefinitely from eminent authorities at home and abroad to show that not only are the different structures of the brain of the average idiot atrophied, and often entirely wanting, but that diminution of weight is the rule. Enough cases have been cited to give a general idea of the defects in anatomical structure of the brain of idiots.

Having determined the constant relation of defective cerebral development to idiocy, it remains to be proven whether the defective condition is a special one affecting the brain only, or is an integral part of the generally defective, or mal-development, or at least of a general tendency toward such perversions of growth. When we take into consideration the fact that the fœtus is developed in two lateral halves, which may or may not develop harmoniously and may or may not fuse together properly, it becomes logical to presume that any influence which tends to produce inharmony and asymmetry of growth in one part of the body, *e. g.*, the brain, must necessarily tend to produce the same conditions in other portions of the fetal halves, providing such influence is not a purely local one. The causes of idiocy not being local, but general, the inference is obvious. It is astonishing to me that the superintendents of institutions for feeble-minded have made so little note of the asymmetrical relations of the two lateral halves of the body, in the cases under their care. Personally, I am of the opinion that harmony of members does not generally prevail in the anatomy of the idiot. In examining the inmates of various institutions I was struck with the numerous examples of arrested development, hypertrophy and asymmetry of upper and lower extremities. These abnormal conditions accord with the types of cerebral mal-development already cited. The following cases from other sources confirm the accuracy of these observations:

"Boy of 5½ years. Admitted into the Liverpool Infirmary for Children October 15th, 1878. Weight 10½ lbs.; height 29 inches; intelligence very limited; can utter no articulate sound; eyes large and well-developed, yet he is undoubtedly blind. Sense of hearing apparently normal. He has all his first teeth, but makes no attempt to masticate his food. Forehead does not recede, head is proportionate to size of body; circumference over the occipital protuberance and eyebrows 16 inches. Cannot sit up, the back below the neck being rigid and arched in the lumbar region from tonic contraction of the spinal muscles, pro-

and that heredity and pre-natal shocks have much to do in producing these conditions.

"Innumerable cases of pre-natal shocks producing idiocy where the parents were both apparently healthy are on record. In one case the news of the loss of the husband at sea had the effect of impairing the intellect of the unborn child; again, the same result occurred in another case as a result of fright occasioned by a team of horses running away with the mother when well along *in utero* gestation. Baron Percy, a French military surgeon, observed that out of 92 children whose mothers had been exposed to the terrors of a tremendous cannonade at the siege of Laudau, in 1793, 16 died at the instant of birth; 33 languished from 8 to 10 months and then died before the age of 5 years; and 2 came into the world with numerous fractures of the bones of the limbs."—Trans. N. Y. State Med. Soc. 1865 to '68.

NOTE.—Rawdon, H. G. "Case of dwarfed growth associated with idiocy and congenital tonic contractions of the muscles of the spine and limbs."—British Medical Journal, London, 1879, 1, 386.

ducing a condition resembling opisthotonos. The upper extremities are in a state of rigidity, the limbs have a wasted and shriveled appearance, but the face is not thin. The child has evidently been well cared for. There is no tendency to rickets. Facial and cervical muscles are unaffected.

"The child was affected as described from his birth; was a twin, but only one-third the size of his fellow twin. He cut his teeth at the usual period. Has had no convulsion or disease of any kind since his birth. He was suckled. Father and mother are healthy and live in the country and their children before and after the birth of this one were healthy and well developed.

"I have thought this case might be of interest to the profession. It certainly seems a curious fact that I should not have been able to discover any report or notice of a case at all similar to this one, and yet I cannot doubt that such cases have from time to time occurred. The case may, perhaps, be regarded as one of intra-uterine blight, but why, or when it took place we can have no means of judging."

(2) Mazier (Edmund).

"On arrest of development in idiocy."

Paris Thesis, No. 452, Paris, 1879.

General conclusions of author:

1. Idiocy consists in an arrest of cerebral development primarily of the nerve centres.
2. This arrest of development may appear at any time of life, uterine or extra-uterine.
3. The organs whose development is incomplete at the time when the arrest of cerebral development occurs are also affected in their development.

4. The anomalies thus resulting consists in the persistence of one of the transitory or rudimental forms through which the body must pass before reaching its complete development.

5. The arrest of development of an organ interferes with its functions, and from this results malformations and numerous organic deviations which constitute a secondary series of anomalies only mediately allied to idiocy.

Obs. 1.—E. P., æt. 16 years, natural child, twin. Had ocular hæmorrhage soon after birth; convulsions till the age of 7; percutient cephalalgia; began to walk when 2 years old; could speak a little earlier.

Cranium: Antero-posterior diameter 0.18 m, transverse diameter 0.15.

Face: Total length 0.155, occipito mental diam. 0.278. Mouth open. Tongue always protruded between the teeth. Palatine arch is deep and oval.

Genital organs are rudimentary.

Mental condition: Voracious glutton; is susceptible of education, having learned to read; cannot write or count. Tries to be useful.

Obs. 2.—P. S., æt. 18, idiot. Mother hysterical,

grandfather died of apoplexy, grandmother was a drunkard and died of phthisis. Forehead narrow, temples hollowed. Microcephalic. Began to speak and walk very late. Is very clumsy; has had convulsions; is frequently angered. Epileptic vertigo. Chronic ophthalmia. Eyes quite separated. Dentition defective; superior dental arch is triangular. Teeth are disposed in three rows and are prominent and projecting. Ears small. Nose greatly developed and arched. Forehead receding and depressed.

Cranium: Antero-post., diam. 0.170, transverse diam. 0.137.

Face: Total length 0.127. Extl. orbital line 0.107. Defective formation of the feet and hands, which are flat; thumbs are thick, short and spatulate-like.

Penis well developed; pubis hairy; no testicles in scrotum, but can be felt in the inguinal canal on each side.

Mental condition: Masturbator. Does not understand anything. Impulsive, violent, cynical.

Obs. 3.—P. P., æt. 17. Idiot in the 2d degree. Congenital club-foot. At the age of 3 years had meningitis, with convulsions for 15 days, and consequent permanent strabismus. Began to walk at 4, and to speak, very late and with great difficulty. Has had variola, typhoid fever, pleurisy and scrofula.

Head: Well formed, hearing good.

Face: Only two incisors in upper maxillary; no canines, three molars on each side. Inferior maxillary is narrowed at a level with the premolars (permanent), two canines, gums fungous, spongy and bleeding.

Hands large and purple. Atrophy of testicles. Penis normal.

Obs. 4.—G. D., æt. 21 years. Microcephalic, can speak and read. Cranium rudimentary.

Ant. post. diam. 0.147, transverse diam. 0.118. Face: total length 0.122. Occipito mental 0.202, external orbital line 0.097; opening of superior dental arch on a level with the first premolar, 0.027.

Ears well developed.

The superior dental arch is contracted at a level with the molars, and thence divergent, teeth carious. Finger-nails curved like claws. Thumb of right hand is upon the same plane as the other fingers, and its dorsal face is turned backwards. Feet long, flat, narrow and misshapen.

Mental condition: Intellectual faculties nil. Tries to attract attention. Has had instincts.

Obs. 5.—L. L., æt. 13. Imbecile. Scrofulous constitution. Double convergent; strabismus very marked. Ears largely developed. Palatine arch high, regularly oval and deep.

Superior maxilla large and thick, and its teeth carious. No canines. Tonsils large, with atrophy of uvula. Genital organs atrophied, single tes-

ticle in scrotum. Belly large and pendulous. Is able to read and write some. Has had instincts and is easily angered.

Obs. 6.—G. S. æt. 16, imbecile, deaf, internal strabismus.

Head normal. Face long, 0.152, width 1.075, occipito mental diam. 0.233; dental arch at a level with the first molar, 0.022.

Ears long. Mouth always open.

Superior dental arch narrowed, palatine arch oval and deep, tonsils enormous, teeth carious and irregularly disposed. Superior prognathism. Lips thick, the inferior is hanging. Intellect susceptible of development. Has had instincts.

Obs. 7.—L. O., æt. 16. Complete idiot, deaf and dumb. Head quite large. Eyes most always closed; strabismus. Convulsions four days after birth, daily attacks till the age of 18 months. Left hemiplegia and right hemichorea. Could walk at 2½ years. Has a deaf sister who has a hare lip. Ptyalism: face asymmetric, more developed on right side. Cranium: Ant. post. diam. 0.165, transverse 0.135. Intellectual faculties nil.

Obs. 8.—F. N., æt. 15. Scrofulous constitution. Microcephalic. Cranium: Post. diam. 0.145, transverse diam. 0.127. Face: Length 0.126, occipito mental diam. 0.222, external orbital line 0.101.

Dental arch on a level with first premolar.

Chronic blepharitis.

Mental condition: can speak, hear, and reads a little, but cannot write nor count. Incapable of the least mental effort.

Obs. 9.—A. B., æt. 10. Superior and inferior prognathism, still has his first teeth which are quite regular. Intellectual faculties nil.

N. B. The measurements are in the metric system.

There are seven other cases almost precisely similar to the above, given in the same work, but it is unnecessary to quote them.

A paper by Dr. G. E. Shuttleworth, England, presented before the International Health Exhibition, London, Aug. 2, 1884, upon "The Health and Physical Development of Idiots as compared with Mentally Sound Children of the same Age," he says, "Many idiots are undoubtedly small at birth, not a few have been brought into the world prematurely, but in nearly all, imperfections of functions interfere with due nutrition and development, as the following table will demonstrate:

Report of Cases of Arrested Development and Excessive Growth of all the Tissues, in Connection with Idiocy, Imbecile and Feeble-minded Children.

Table shows the Relative Mean Stature and Weight of the general population and of 1,209 Idiots and Imbeciles in Earlswood, Royal Albert, and Larbert Asylums.

Age last Birthday.	HEIGHT.				WEIGHT.			
	General Population.		Idiots and Imbeciles.		General Population.		Idiots and Imbeciles.	
	Inches.		Inches.		Pounds.		Pounds.	
	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.
5	41.0	40.55	40.0	39.5	39.2	39.0	37.5	37.5
6	43.0	42.88	42.25	41.25	41.7	43.0	41.0	41.0
7	45.0	44.45	44.0	43.25	47.5	46.5	45.0	45.0
8	47.0	46.60	45.75	45.25	55.0	52.1	50.5	49.0
9	49.0	48.73	47.5	47.5	60.0	55.5	55.5	53.0
10	51.0	51.05	49.0	49.0	65.0	62.9	59.0	59.0
11	53.0	53.10	51.0	51.0	70.0	68.1	64.5	66.0
12	55.0	55.66	52.5	53.0	77.5	76.4	70.5	72.0
13	57.5	57.77	54.75	55.0	85.0	87.2	80.0	80.0
14	60.0	59.80	56.5	56.5	92.5	96.7	85.5	88.0
15	62.0	60.93	59.25	58.0	102.5	106.3	94.5	95.0
16	64.0	61.75	62.75	59.0	117.5	113.1	103.0	102.0
17	65.5	62.52	64.25	59.25	135.0	121.1	116.0	108.0
18	66.5	62.44	63.25	59.0	142.5	123.8	120.5	108.5
19	67.0	62.73	63.25	59.0	143.7	123.4	122.5	108.5
20	67.25	62.98	64.0	59.5	145.0	123.4	122.0	108.5
21	67.5	63.03	64.25	59.5	146.2	124.1	122.0	108.5
22	67.75	63.03	64.25	59.5	147.5	124.1	122.0	108.5
23	67.75	63.03	64.25	59.5	147.5	124.1	122.0	108.5
24	67.75	63.03	64.25	59.5	147.5	124.1	122.0	108.5
25-30	67.75	62.02	64.75	59.75	151.2	120.8	123.0	109.0
30-40	67.75	61.15	64.75	59.75	152.5	118.6	123.0	109.0
40-50	68.0	61.15	64.75	59.75	155.0	118.6	123.0	109.0
50-60	68.0	61.15	64.75	59.75	157.5	104.0	123.0	109.0

It will be observed that idiots are shorter than the general population: at 5 years, by 1 inch; at 10 years, by 2 inches; at 15, by 3 inches; at 20, by 3 inches. While, as regards weight, male idiots are lighter than the general population: at 8 years, by 4½ pounds; at 10 years, by 6 pounds; at 15 years, by 8 pounds; at 20 years, by 23½ pounds, the disparity being greater in the male than in the female sex. It appears that the relative rate of growth of the two sexes of idiot children follows the same rule as that of normal children, and is subject to the same variations at the age of puberty, for two years preceding which the growth of girls is in excess of that of boys.

ABNORMALLY SHAPED HEADS.

If the mental capacity could in all instances be measured by the size and form of the head, many among the idiotic would rank high. The shape and size of the skull is indicative of the mind only in a general way, the feeble minded being about equally divided between abnormally large and small heads. The measurement of the ordinary well-balanced head ranges from 20 to 36 inches in circumference, and that of the idiotic head from 12 to 26 inches. Opinions vary in regard to the average size of the microcephalic idiots, some claiming that all heads of 16 inches and under come under this class, and others that 13 inches in circumference is the average microcephalic head, while upon the other hand, all heads which measure more than 36 inches in circumference would be considered either macrocephalic or hydrocephalic.

The extreme cases are comparatively few in the institutions. Out of 600 inmates of the

Pennsylvania Institution, at Elwyn, which I examined with the assistance of the superintendent, Dr. I. N. Kerlin, and Dr. Wilmarth, I found but 28 microcephalic, 24 macrocephalic and 3 hydrocephalic cases. We shall find these extreme cases exceedingly interesting in the study of the etiology of irregularities of the teeth, and shall give special attention to their relations later. There is a certain size of the head, below which an individual must be an idiot. Voisin says, "that the proper exercise of the intellectual qualities is impossible with a head of from 11 to 13 inches in circumference, and a measurement of 8 to 9 inches from the root of the nose to the posterior border of the occipital bone." Irregularities in the external surface of the cranium predominate in every idiotic head, and in such variety that no two heads are found alike. These conditions show a want of development of the brain. The brain substance being the first to obtain its growth, the cranial bones are moulded about it, and are in a manner supported by it until the sutures have united. If the brain be slow in developing and shaping, ossification of the sutures is retarded; should the brain or parts of it be retarded in growth, the cranium would be either microcephalic or asymmetrical in its development. Again, inharmonious closure of sutures may also produce unilateral contractions of the bones of the head. I do not wish to convey the idea, however, that asymmetry in the cranium is always the result of malformation of brain tissue, as by far the majority of cases result from arrested development or interruption in the growth of bone tissue. *Per contra*, I am well aware that perfectly symmetrical heads are rare in even normal individuals. The diagrams in possession of our hatters tell a woful tale, not at all flattering to our racial self-conceit! This retarded growth may result from constitutional disturbances acting unfavorably upon general nutrition, or from inflammatory conditions of the osteophytic membrane which may take place *in utero*, thus prematurely closing the sutures. There is no law governing the development of the brain and the closing of the cranial sutures. Those bones, the sutures of which close before the proper time, will be narrowed at the point of premature fusion. It is reasonable to expect, that when bones prematurely ossify at one part of the cranium, dilatation will take place directly opposite, as the brain grows in the direction of the least resistance. This explains many peculiar deformities of the head; again, if the majority of the sutures ossify prematurely, microcephalus may result. It appears reasonable, also, to infer that the shape of the basis cranii will be affected in a similar manner by too early or too late ossification. These changes are caused by improper nutrition of the bones and cartilage. A knowledge of this fact gives us a clear conception of

the relation which various general conditions bear to idiocy and imperfect development in general. The influence of such perversion of nutrition as are produced by syphilis, tuberculosis, struma and intemperance over the ossification and growth of bone is a most potent one. The shape of the base of the skull and the contour of the face depend largely upon the ossification of the sutures. When ossification of the cartilages occurs early, a shortening of the basis cranii results. Especially is this the case when premature ossification occurs in connection with the sphenoid bone. The age, when the basilar portion ossifies in a normal subject is from 15 to 20 years. Thus too early ossification naturally produces a shortening in the antero-posterior direction which cause serious deformities in the shape of the face, and an abnormal curvature at the base of the brain. The superior maxillary bones are attached to the bones of the head and face by eight articulations, and as the ossification of the sutures occurs at about the same time as the ossification of the sutures of the basis cranii, the same influences which affect the cranium must also affect the superior maxilla. These conditions may account for family features not presenting themselves until middle age. This is a strong argument in favor of postponing the operation of regulating teeth until the contour of the face has been permanently established. When there is inflammation of the membrane *in utero* (which is of common occurrence), the sutures ossify before or soon after birth, and as a result the base of the cranium will assume and remain in, an undeveloped condition, causing the face to present an abnormal shape and size, which will broaden the face, throw the cheek bones out prominently, make the nose broad, flat and sunken, and extend the space between the eyes, giving as a whole a face void of expression. When the sutures at the base of the skull ossify normally the antero-posterior diameter is longer, the base of the cranium is more angular, the features sharper, with the eyes closely set, and a face full of expression. The sphenoid bone does not attain its full size until from the 25th to the 30th year of age.

I am of opinion that when the bones at the basis cranii ossify before, or shortly after birth, the superior maxilla and septum nasi assume a decidedly unnatural form. Dr. Oakley Coles, in his work upon "Deformities of the Mouth," ascribes the different deformities of the jaw to premature ossification either of the sutures or the basis cranii, thus he says, "that the deformity known as inter-maxillary prognathism is the result of a force operating on the inter-maxillary bone, such force originating in the body of the sphenoid and being transmitted by the intervening nasal septum."

He says, also, page 95, "After carefully exam-

ining the works of various writers on the subject of microcephalic idiocy, there seems sufficient evidence to justify the belief that premature ossification of the sutures is the rule in a majority of cases of microcephalus, and we may, therefore, assume if we cannot absolutely conclude, that this influence operates powerfully in the production of the dental deformity known as the lambdoid jaw" or V-shaped arch.

While, as has already been observed, I believe that premature ossification of the sutures and basis cranii is followed by deformities of the jaw and septum nasi, I do not think that they bear to each other the relation of cause and effect. In this I beg leave to differ with Dr. Coles. It is unnecessary to expatiate upon this subject in the present paper, as it will be the principal topic for discussion in another which I hope to present later on.

RÉSUMÉ.

1. Irregularities of the teeth cannot be justly said to be of congenital origin since they do not exist at birth.

2. Irregularities of the teeth cannot occur until they have erupted, and thus shown their relation to each other and to the jaw.

3. Irregularities of the teeth, which I have designated constitutional, prevail to a greater extent among the idiotic, deaf and dumb, and blind, than among an equal number of strong and healthy persons.

4. It may be seen that not only is the brain matter deficient in the feeble-minded, but, as I have noted, many cases are seen which demonstrate that the osseous system is also generally defective.

5. Arrest of development is the result of malnutrition during embryonal and infantile growth influenced by consanguineous marriages, scrofula, drunkenness in parents, pre-natal influences, intra-uterine education and constitutional diseases, or of inflammation of the osteophytic membranes *in utero*.

6. Irregularities of the teeth do not exist among normal or large jaws, while among those who have abnormally small jaws, the majority have irregular teeth.

7. When premature ossification of the sutures at the basis cranii takes place, the antero-posterior diameter is shortened, producing arrested development of the superior maxilla.

8. When the bone tissue is arrested in development from malnutrition, the maxillary bones are also affected.

9. When arrested, development of the superior maxilla occurs, the face often presents a sunken appearance at the angle and root of the nose, with the nose broadened and the inferior maxilla prominent.

10. In another paper I shall attempt to prove

that the irregularities of the teeth, called constitutional, are the results of small maxilla, and that Dr. Hammond's future man will not only lack hair and teeth, but the superior maxilla will gradually decrease in size and eventually become rudimentary.

BIBLIOGRAPHY.

The authorities for the above are "Medicine in its Relation to the Mind." Dickson. "Griesinger on Mental Diseases." "Insanity," by George H. Savage. Ireland's work upon "Idiocy and Imbecility," and the "Transactions of the Association of Medical Officers of American Institutions for Idiots and Feeble Minded Persons."

1. Hutchinson, J. Arrested development of the radius, fore-arm and hand. Tr. Path. Soc. London. 1865-6. XVII. 223, 226.

2. Leroy. Arret de développement de l'avant-bras gauche. Revue. Photog. des Hôp. de Paris. 1871. III. 80-82.

3. Rodenstein. Case of arrested development of both upper extremities. Am. J. Obst. N. Y.: 1876. VIII, 603-663.

4. Shattock. Case of arrested development and growth of the right upper limb in a man. Tr. Path. Soc. Lond. 1881. XXXII. 276-280.

5. Cayley, W. Arrested development of fore-arm and hand. Tr. Ibid. 1865-6. XVII. 430.

6. Chipperfield, W. N. Curious arrest of development of the hand. Madras Monthly. J. M. Soc. 1873. VII. 409, pl.

7. Doran, A. A case of arrested development of the bones of both fore-arms, extreme senile changes in the osseous tissues. Tr. Path. Soc. Lond. 1876. XXVII. 314, 316.

8. Dreyfous, F. Arret de développement du membre supérieur? Progrès. Méd., 1878. VI. 483.

9. Foucher. Excessive development of left arm and leg. Bull. Soc. Anat. de Paris, 1850. XXX. 98, 108.

10. Hill, A. Case of arrested development in the right forearm of—. Brit. Am. J. M. & Phys. Sc. Montreal. 1849. V. 119.

DR. J. S. MARSHALL, Chicago: I have listened with great interest to the subject just presented by my friend, Dr. Talbot. I believe he is correct when he says the causes of irregularities are: "First, those developed with the formation of the osseous system and due to constitutional causes; and, Second, those produced by local causes;" but cannot agree with him in his objections to the use of the term *congenital*, as used by the English authors quoted, when they say, certain forms of irregularities are congenital, or of congenital origin. The author would confine the term to very narrow limits,—to conditions which are present and discernible at birth only. The inherited small superior maxilla, which upon the eruption of the permanent teeth cause irregularities is, nevertheless, a congenital defect of conformation, though the evidence of this may not be at first apparent. I can therefore see no impropriety in this use of the term, and I think the etymology of the word will bear out the correctness of its use in this connection. Congenital causes would therefore be those which occur during generation, and may arise from hereditary predisposition, or inherited tendencies or defective conformation. Acquired causes would be those which occur after

birth, the result of disease or accident. The terms congenital and acquired, would seem to cover the subject as completely as could be desired.

The special point in the paper, however, which interested me most is that in which he claims the superior maxillæ are gradually decreasing in size and that eventually they will become rudimentary. I am not prepared to admit the correctness of these views. The thought is repulsive. What would such a condition mean? Hideous deformity. The marring of features which God created in his own image, and I cannot believe that He would afterwards so disfigure his handiwork. I am willing to admit, however, that I have seen a goodly number of such cases as the author refers to; but these were cases in which the individual had inherited the small maxillæ of one parent with the large teeth of the other, or were the result of arrested development caused by congenital or acquired idiocy.

The first named cause of this form of defective conformation I think is more commonly seen in America than elsewhere, and is due to the effects of the intermarriage of individuals from so many different races and nations, who have been brought together through immigration, under the same social system.

The Caucasian race is divided into a number of quite distinct families or national types; the English, the German, the Scandinavian, the Irish, etc., and each has a peculiar cast or type of features which indicate to which of these nations it belongs, while the size and shape of the maxillæ play a very important part in determining the type. The alveolar arch of the English forms very nearly one-half of an ellipse; in the German the arch is broader through the canine region, as is also that of the Scandinavian, and approaches more nearly a half circle, while in the Irish the curve is flattened in the incisive region and quite angular in the region of the cuspids. These types of features are all so marked as to be readily distinguished by even the casual observer. They are national peculiarities and will remain distinctive so long as miscegenation is not practiced to any great extent, for they are the natural result of centuries of intermarriage or breeding with people of the same type.

America, or more correctly speaking, the United States of America, cannot yet boast of a type of face that can be strictly called American. The features of the people are in a transition state. The mixture of blood has been so constant and so diverse, ever since the settlement of the country, that the original national peculiarities of features of the various nations represented are gradually being modified.

In Virginia, which was settled by the English and whose people have kept the original blood tolerably pure, we find a type which differs but

slightly from that of their English cousins, no more so than might be expected from the change of environment. In New England where the mixture of blood was quite diverse, there is seen an effort upon the part of Nature to establish a national type; but this is only the beginning. Two centuries is not time enough to assimilate and remodel such a heterogeneous mixture of conflicting elements. The crossing of races of men changes the size, form, mental capacity and physical endurance. In the crossing of distinct races, as for instance the Anglo-Saxon with the Negro, the size, form and mental capacity of the lower order may be improved, but the physical endurance (to labor or resist disease) has been lowered. This fact was generally recognized by the slave buyers before the abolition of slavery in this country, and consequently they never bought mulattoes for hard work in the rice fields or upon sugar plantations. On the other hand, the Anglo-Saxon element is not improved by the admixture of Negro blood.

Breeders of fast horses never cross their stock with an inferior breed—cart horses, Norman, for instance, but in order to improve the speed, form and endurance, they chose the finest animals of the same stock or general type, carefully selecting those having the finest points and which complement each other. In this way the stock is gradually improved in all those characteristics most desirable. This is known as selective breeding, but if confined to too narrow limits a few generations only is required before the stock begins to degenerate. Marked illustrations of this in the human family may be found in the degeneration of some of the royal and noble families of Europe, where, for political reasons, or for the sake of entailing property, they have intermarried for several generations. The insane asylums and institutions for the feeble minded give the result.

The author also says that "the teeth retain the same size and shape that they had 3,000 years ago." This, I believe, is in a relative sense true, but I cannot believe that the superior maxillæ on the other hand are growing smaller and the teeth retaining the usual size. I think he has made the mistake of drawing conclusions from isolated cases and conditions which are only transitory, steps in the processes of Nature in establishing and perfecting a new type. As I said before, we have no national type of features in America, and it will require centuries to produce one, but when that type shall have been perfected all its parts will be in harmony; there will be no such deformed physiognomy as that pictured in the paper, but rather a higher type of Anglo-Saxon beauty.

The Anglo-Saxon is the dominant race and destined to rule the world. It is stamping its peculiarities upon every race and nation with which it comes in contact, and is no less surely impressing its mental and physical characteristics

upon those people with whom it mixes its blood. This will account for the change taking place in the features and consequently in the maxillary bones and alveolar arches, of the inhabitants of this country.

The parent of the strongest characteristics usually dominates the character of the offspring.

This is equally true of men and the lower animals, and none the less true of the races of mankind. If the same care could be exercised in the selection of individuals desiring to enter into matrimonial relations that is always insisted upon in the selective breeding of horses, the congenital or constitutional causes of irregularities of the teeth, as well as other and graver constitutional defects, would soon pass away and the maxillary bones and the teeth would be in perfect harmony. But so long as men and women are permitted to enter the matrimonial state with no thought as to their fitness for such relations or the well-being of the offspring likely to be born to them, such deformities and constitutional defects will continue to exist, but not indefinitely. Nature will, in spite of this, through her moulding and assimilating processes, harmonize all discordant elements of feature and form, and produce in time a national type of face and jaws in which deformities of this class will no longer exist.

AN INTERESTING CASE OF FIBROMA OF THE LARYNX.

Read in the Section on Otology and Laryngology, at the Thirty-Ninth Annual Meeting of the American Medical Association, May, 1888.

BY JOSEPH EICHBERG, M.D.,
OF CINCINNATI.

W. S., the subject of this sketch, whom I present to the Section for further examination, first came under my observation on the 23d of September, of last year, with the following history: The boy, who had always enjoyed fair health, and was well developed and nourished for his years, was taken down on the 28th of June, 1887, with a very severe attack of scarlet fever, associated with diphtheritic symptoms of the most pronounced type, followed by severe hæmorrhage from the ulcerated patches. These hæmorrhages occurring during the period of convalescence required the hypodermic use of ergotin before they were finally arrested.

The convalescence having progressed so far as to permit of the patient's travelling, he left the city on the 7th of August, in company with other members of his family, and of Dr. Judkins, by whom I was subsequently called in council, and whose care and interest in the case has not flagged since its inception. The voice then, and prior to his illness, had been somewhat hoarse, though there had been no particular embarrassment of respiration.

It was intended to pass the summer at Atlantic City. So feeble had the little patient become, that he could neither feed himself, nor walk, at the time of leaving home. Within three days of his arrival at the seashore a marked improvement was noted, but there was scarcely any audible voice.

On the 18th of August, as the result, it was thought, of undue exposure, the boy was suddenly seized with most distressing spasmodic breathing, a hoarse, barking cough, and dyspnoea; so that it was feared a fresh membranous exudation had occurred in the interior of the larynx.

The difficulty of breathing gradually increasing, assistance was telegraphed for from Philadelphia, whither the boy was removed on the 21st of August, and tracheotomy was performed, under the advice of Dr. Meigs, by Dr. Wharton. So imminent seemed the danger that no time was taken to produce anæsthesia, and the carbonic acid poisoning had reached such a stage that, in his own words, he never felt the operation.

The dyspnoea was relieved at once, but the boy's strength again gave way and it was two weeks before he could leave his bed. The first attempt to withdraw the tube was made three weeks after the operation. In less than forty-five minutes the peculiar hoarse breathing again manifested itself, requiring the reinsertion of the tube. The effort to establish laryngeal breathing by plugging the orifice of the tube with a cork likewise proved unsuccessful, and the patient was then taken to an eminent laryngologist, who found the larynx "occluded at its upper orifice by morbid growth, which he presumed to be what is known as papilloma." A piece of this mass was removed by forceps for microscopic examination. This was on the 21st of September.

The boy was brought home on the following day and the first examination showed the entrance of the larynx to be almost entirely occupied by a pinkish mass, attached by a broad base to the middle and posterior part of the left ventricular band; completely overhanging the parts below, so that there was but a small chink along the right ary-epiglottic fold, through which an entering current of air could find passage.

On the 26th of September the loop of the galvano-caustic holder was passed over the growth, and the larger portion of the mass cut off with the snare without the aid of the current. Very little resistance was encountered in drawing the loop and only a slight hæmorrhage followed. The ease of division of the growth awakened some suspicion of malignancy, which was strengthened by the microscopic examination.

The portion of the tissue removed measured $3\frac{1}{2}$ inch in length, $\frac{1}{4}$ inch in width and was $\frac{5}{8}$ inch high. The microscope showed the growth to be covered with a layer of stratified pavement epithelium, consisting in some places of as many as

ten layers of cells loosely attached to the subjacent mass of the growth. "The tumor itself consists almost entirely of a young and rapidly-growing connective tissue, made up of round cells enclosed in the meshes of a finely fibrillated connective tissue.

"Distributed throughout the growth in considerable masses are glandular ducts and acini (probably from hypertrophied mucous glands). These are made up of short columnar epithelium, and their walls are infiltrated with the round-celled proliferation. The blood-vessels are not very abundant and the walls of the larger ones show some connective tissue thickening. In certain areas there are signs of breaking down, where collections of granular debris with isolated round cells and free nuclei are seen." A note was made at the time that were it not for the presence of such abundant fibrillated connective tissue there would be no hesitation in classing the growth as a round-celled sarcoma. No appearance of papillary overgrowth was anywhere manifest. The nature of the tumor was such as to lead to some fear for the outcome of the case entirely irrespective of the local obstruction occasioned by its position. The report of the fragment removed in Philadelphia, examined at the Army Medical Museum, was, in the main, identical with our own observations.

Somewhat fearful of the result, yet anxious to eradicate the growth if possible, the remaining portion of the base of the tumor was canterized with the galvano-caustic wire on three separate occasions, and we soon had the satisfaction of seeing the continuity of normal mucous membrane restored, with no indication of a recurrence since that time.

The clearing of the larynx had not put an end to the difficulties in the management of the case. The patient had now worn his tracheal tube about seven weeks, and would not tolerate its removal, nor could he wear the cork for more than half a minute without manifesting alarming signs of dyspnoea.

In view of the possibility of other similar growths below the vocal cords, a metallic probe, suitably bent, was on two occasions (toward the end of October) passed through the tracheal wound, through the larynx and into the pharynx, until its rounded end was plainly visible. No obstruction was encountered.

Another experiment was made to free the patient from the incumbrance of the tube by recourse to intubation. It was thought that if an intubation tube could be inserted between the cords the external wound would close, and the metallic tube between the cords could then be withdrawn. Two attempts were made, both under ether. The tracheotomy tube having been withdrawn, the intubation tube was introduced into the larynx, but could not be passed below the cords. Either

from the effect of ether, or from the irritation of the instrument, or from paralysis of some of the muscles, a spasm of the glottis was set up, which rendered it impossible to push the tube down without the use of force, and this was not considered advisable.

Small localized overgrowths of granulation tissue in the track of the canula were easily controlled from time to time by the actual cautery. There was now some difficulty in obtaining a satisfactory view of the larynx owing to the depressed position of the epiglottis, a condition frequently observed after tracheotomy. The difficulty in this case was possibly increased by a slight cicatricial contraction in the left side of the larynx. When clearly seen, the larynx was found to be entirely free from neoplasms, and the left cord had resumed its normal appearance, though almost stationary in a position of adduction, the right moving slightly, but in a very limited arc.

The inner tube of the canula was now removed and the boy encouraged to use his voice, if possible, the tracheal orifice being closed by the finger, while the expiratory current passed through the fenestrum in the outer tube. Several changes were made in the position of this fenestrum, until it was found to correspond exactly with the tracheal lumen.

Faradization of the larynx was begun in the latter part of December, and has been continued with very little interruption, the sittings lasting about ten minutes twice a day. In January the patient was seen by another laryngologist, of New York, who found, in addition to what has been described, a slight swelling of the free edge and under surface of the cord.

The point of interest to the patient and his family was the withdrawal of the tube. Repeated trials with the cork had always produced a suffocative spasm, yet he was able to breathe comfortably, while his tube was being cleaned, for about ten minutes. It was evident that a nervous element entered largely into his inability to wear the cork. On the 26th of February, his attention being otherwise engaged, he wore the cork for eight minutes; that same afternoon for an hour, and, having once gained confidence in himself, for two, three, and four and a half hours at a time. Now he can keep it in place while eating and attending to his ordinary school duties.

Since the early part of March he has been taking minute doses of strychnine, which he bears very well, and latterly the tracheal end of the tube has been gradually shortened, so that it now passes just below the border of the tracheal wound.

How and when are we to get definitely rid of the tube? This is the all-important question for the patient and his friends; they find it difficult to reconcile the assurances of steady improvement constantly given by the physicians with the fact

that the boy is not yet able to dispense with his tube. The answer to the question must depend on the cause of the difficulty.

We have to consider the following possibilities:¹

1. A narrowing or complete obliteration of the passages of the larynx by a growth of granulations above and around the canula.
2. An impairment or complete loss of those functions of the larynx which regulate the admission of air through the rima glottidis.
3. Adhesion of the opposed surfaces of the cords.
4. Nervousness and spasm.
5. Collapse or flattening of the tracheal walls in consequence of too extensive division of tracheal rings.
6. Cicatricial contraction of trachea about the incision and the end of the tube.

From the boy's ability to pass several hours in comparative comfort with the cork in the tube during the day, the inference is plain that the obstruction is not in the parts above the tube. Phonation is clear and fairly good; the pitch of the voice is, however, altered, owing to the peculiar conditions present. There are no granulations in the track of the tube, nor is there pain about its lower orifice. The expectoration which comes through the tube is not tinged with blood, as it would probably be were granulations present. Often this expectoration is easily expelled through the mouth.

There seems to be no great amount of cicatricial tissue about the tracheal wound, though this is sometimes present in great abundance, as in the case reported by Stenier, where the growth of fibroid tissue acquired dimensions of half an inch. No folds of mucous membrane, owing to the relaxed condition of this tissue, can be discovered by the probe or by laryngoscopic examination; and the only apparent causes that prevent the withdrawal of the tube are the condition of paresis of the abductors of the cords and the nervous element in the case.

Considerable attention has very justly been called by nearly all writers upon the subject to this last factor in the management of all cases of delayed removal of the tube. It certainly enters very considerably into the present case; and its importance was impressed upon me by a case seen about four years ago, in which there was retention of the tube after diphtheritic croup. In that instance, the child, three years of age, would not tolerate the withdrawal of the tube for more than five minutes. Efforts to substitute an intubation tube for the canula proved fruitless owing to the impossibility of inserting the tube.

The little patient went on in comparative comfort for about a year. The father, a brewery hand, returned home, one evening, strongly intoxicated. Enraged at the sight of the tube, he

withdrew it rather roughly and threw it across the room; at the same time threatening with dreadful punishment every one who should endeavor to replace it. Terrified beyond measure, forgetting about her own condition under the impulse of alarm that controlled her, the little girl breathed easily for the remainder of the evening and required no further attention.

Another case reported by Lovett,² falls into the same category. A girl three years old, had tracheotomy performed May 1, 1881, for croup. The tube was removed the seventh day, and left out for about forty minutes, when it had to be reinserted. May 15th another trial was made unsuccessfully. June 3d the trachea was stitched to the edges of the skin wound, yet the tube had to be replaced. Several other unsuccessful attempts were made to remove the tube, and the child was finally dismissed. One evening, July 19, 1883, two years after her discharge from the hospital, after the mother had cleaned the tube preparatory to replacing it, the child said: "I do not want it any more; you need not put it in," and never had any trouble.

The dependence upon the tube becomes so great in these cases that it is easy to understand the nervousness which follows any attempt at withdrawal; and the most difficult part of the treatment seems to be the establishment of self-confidence on the part of the patient himself. In very young children this may be accomplished by subterfuge, or the patient controlled by fear; in older patients, however, the difficulty is greater.

Some attention is to be paid to the disused muscles, which have become weakened through long inaction, until, as in our own case, a condition of more or less complete paralysis of the abductors result. The corking of the canula, and the use of the larynx for phonation and respiration will, doubtless, assist in overcoming this difficulty. It is true that Trousseau has condemned the fenestrum in the tube as a useless and mischievous thing, as its sharp edges always cause irritation; but care in the location of the fenestrum, so that its edges have no point of contact with the soft tissue and a little mechanical skill in rounding the opening will overcome this objection.

The trying time for all the patients seems to be the period of sleep. Many succeed in passing the day very comfortably, but have paroxysms of dyspnoea as soon as the recumbent position is assumed, or when they eventually fall asleep. A certain amount of attention seems requisite to preserve the regular action of the parietic laryngeal muscles; and long continued exercise is often necessary before the desired result can be obtained.

I do not know that we can express in figures, or have any collected statistics bearing on, the proportion of cases in which the ultimate removal has been effected; but, while its withdrawal

¹ Tupper. Boston M. and S. Jour., 1886.

² Boston M. and S., June, 1886.

is manifestly desirable, existence can be easily maintained for long periods with the tube *in situ*. Thus Uhde³ reports a case where the canula was worn for forty years; and Brinton⁴ and Morton each mention a case of twenty years' standing. These statements contrast rather strongly with the announcement made by Mongot to the French Academy, that few children reach adult age after tracheotomy; a statement based on the great rarity of the characteristic cicatrix among a larger number of French conscripts.

There is but one point more to consider and that is the condition of the patient, after removal of the tube has been successfully accomplished. The anxiety that has attended the progress of the case, will even then not be entirely allayed, for some peril still hangs over the patient. Fleiner⁵ in an elaborate article on "Stenosis of the Trachea after Tracheotomy" mentions a number of cases, in which there was sudden dyspnoea weeks or even months after the removal of the tube. At no time following its removal, until after the lapse of several months are we safe from the danger of sudden asphyxia, and the prognosis must be carefully held in reserve. Ross reports fourteen cases of polypi developing at the site of the cicatrix after tracheotomy; of these, four died before a second tracheotomy could be made; seven had a second tracheotomy (with five recoveries), two had a third operation and are still wearing the tubes. In forty cases of excessive granulation-growths from all sources, where the tube was worn for at least two months, sixteen were fatal, nineteen were cured and five are still wearing the tubes.

Dr. Lovett closes his article upon the subject with the statement that the treatment has been as varied as it has been inefficient. This is a rather discouraging view to take of the matter, and one that can hardly be sustained. Patience and perseverance, with a little help on the part of the patient, will yet succeed in overcoming the difficulties in many an unpromising case.

MEDICO-LEGAL ASPECTS OF SOME INJURIES OF THE SPINAL CORD.

Read before the Chicago Medico-Legal Society, October 6, 1888.

BY JAMES BURRY, M.D.,

SURGEON TO THE C. S. F. AND C. RY.; CONSULTING SURGEON TO ST. JOSEPH'S HOSPITAL, JOLIET, ILL., ETC.,

— AND —

E. W. ANDREWS, M.D.,

PROFESSOR CLINICAL SURGERY, CHICAGO MEDICAL COLLEGE; SURGEON TO MERCY HOSPITAL, CHICAGO, ETC.

Within a period of five years English railway companies have paid in damages in cases of alleged injury to the spinal cord, the enormous sum of £2,200,000, or \$11,000,000. In our own city, the greatest railway center in the world, and in

other parts of our country, large sums have been paid as compensatory damages in similar cases. \$300,000 it is said were paid to the sufferers in the Chatsworth accident, and the largest individual damages were paid in settlement of cases of spinal injury. Specific instances of the enormous sums which have been awarded to this class of obscure injuries are:

Case of Waterman vs. the Chicago & Alton R. R.—The plaintiff claimed large damages for spinal concussion said to be produced in an accident. Dr. Clark Gapen and other experts testified that injury was the cause of the patient's symptoms, while Drs. Senn and Whiting testifying as experts for the defense agreed in stating that the patient had locomotor ataxia. A verdict of \$23,000 was awarded.

Case of Holland vs. the Chicago & Eastern R. R.—The plaintiff, an employé of another line, was injured in a collision and afterward reported for work apparently well. He was not given employment. Shortly after this it was claimed that symptoms of spinal concussion developed and permanent disability followed. Large damages were claimed and the plaintiff was awarded the sum of \$23,000.

Case of Rozenzweig vs. the Lake Shore & Michigan Southern R. R.—The plaintiff having been put off a train at a place not a regular station, was walking across the tracks, and either tripped over some object or was knocked down, he did not know which. Spinal injury of an obscure type was alleged and heavy damages awarded. The case after final appeal to the Supreme Court of the State, was settled by the road paying to the plaintiff \$48,500 with interest, or in all over \$50,000 compensation.

Case of Phillips vs. the London & Southwestern Ry.—The plaintiff, a physician, was disabled about two years by a railway injury to the spinal cord. It was proved that he had possessed a practice worth \$40,000 per annum, and a verdict of \$80,000 was given. Dr. Steele, who has met Dr. Phillips during the past summer, informs us that he is, except for a slight lameness, quite restored to health.

In examining the expert medical evidence in the above cases one cannot but see the over-shadowing influence of the theories laid down by Erichsen in his work on "Concussion of the Spine." A careful and comparative examination of these theories of Erichsen with those of later investigators in neuro-pathological fields may be of interest.*

Erichsen teaches, that there are two opposite and distinct conditions produced in the spinal cord by injuries. In one there are all the usual and visible effects of traumatism elsewhere—laceration of tissue, hæmorrhage into the spinal canal or substance of the cord and inflammation of the cord and membranes. In the other there

³ Deut. Med. Woch. 1885.

⁴ Phil. Med. Times. 1886.

⁵ Arch. f. Klin. Chirurg.

are no definite structural changes, but only that condition which he describes under the term "anæmia of the cord," and which he himself admits can only be inferred and is not a well-proved pathological fact.

Cases of the first class, viz., those in which definite structural changes are produced, always give rise in his opinion to definite symptoms and are easily recognizable pathological states. In his ideas of the gross pathology we find nothing essentially different from the views of the older pathologists. Thus we find him describing the condition produced by myelitis as softening of the cord, notwithstanding the fact that modern investigation has shown that inflammation does not always produce softening, and that the latter may exist without myelitis. (Gowers.)

Grosser structural lesions are not the condition, however, which have given rise to conflicts of medical evidence. It is upon Erichsen's description of the second class of cases, viz., those in which there are no visible structural alterations, that the greatest and most numerous claims for compensation have been built up. It is well therefore, in view of the conflicts of opinion which have arisen, carefully to examine the evidence as to the existence of this second class of cases, described under the term "anæmia of the cord."

Accuracy in the use of scientific terms, may properly be demanded in a work which is so often quoted in medico-legal contentions. How much evidence is there then of the existence of any such pathological conditions as "anæmia of the cord?" Dana in his latest writings asserts: "Chronic spinal anæmia can hardly be placed in the category of distinct spinal affections." Gowers, in his work just from the press, embodying the results of original and exhaustive research says, in discussing anæmia and hyperæmia of the cord: "The condition of the vessels of the spinal cord after death affords no indication whatever of their state during life. . . . Local variation occurs only in the local hyperæmia which attends inflammation and the anæmia which results from pressure; hence the occurrence of variations in the state of the vessels of the cord and the effects that such variations may produce are matters of inference from symptoms observed during life, symptoms that are themselves open to various interpretations. Where the ground is barren of facts, theory is always luxuriant. Anæmia or congestion of the cord affords a ready explanation of symptoms, the cause of which is unknown, and it is scarcely surprising, therefore, that such an explanation has often been given. Some surprise may, however, reasonably be felt at the absolute confidence and precision of detail with which these states have been invoked as morbid processes, when the opinions expressed rest not upon one tittle of definite evidence. Positive assertions always receive some credence, however unwar-

ranted the assertions may be, and positions incapable of proof are also sometimes incapable of disproof. It would be futile and useless to attempt to refute in detail the various statements that have been made regarding anæmia and hyperæmia of the spinal cord. . . . We know nothing of it as an independent condition; nevertheless, volumes might be filled by the collected descriptions of the varieties and symptoms, descriptions in which the unrestricted play of "scientific" fancy has elaborated a symptomatology for the separate congestion of every part of the spinal cord." It is doubtful if any symptoms can be, with confidence, assigned to mechanical congestion.

In the face of these modern views, what weight shall be attached to the opinions on matters of obscure pathology of a writer who not himself a specialist in neurology, nor possessed of any of the recent methods of investigation, nevertheless lays down such positive dicta. Views which were published in 1866, twenty-two years ago, remain, according to his statement in the latest edition, "substantially unchanged" to-day. Within recent years the minute and gross pathology of the spinal cord have been almost entirely re-written. Intelligent discussion of the structural changes which occur in the cord in disease and injury are impossible without reference to the investigations of Charcôt, Brown-Séquard, Gowers and Bramwell. Yet, most of these investigations have been made since the publication of Erichsen's treatise and therefore find no place in his system of pathology. This would not be surprising, were it not also true, that Erichsen holds to substantially the same ideas in his latest writings. What weight should now attach to expert evidence based only upon inference from clinical experience, when diametrically opposite testimony rests on the firm basis of post-mortem and microscopic investigation?

That we may not appear in any particular to misrepresent this writer's opportunities for exact knowledge, we may quote his own words in his latest edition: "No instance (of post-mortem examination) has occurred to me in hospital, or in private practice, in which I could obtain one . . . The only case indeed on record with which I am acquainted, in which a *post-mortem* examination has been made, in a person who died from the remote effects of concussion of the spine, was published by Dr. Lockhart Clark," etc., etc., etc., in 1886.

What is surprising is not so much that these opportunities were wanting—for it is only of late years and in a few hospitals anything like systematic work has been in this line—but rather that on such a small basis of known fact so large a structure of inferential pathology has been built, and that it should be stated with the positiveness of well-proven facts and should have carried such

weight in the medical world. Even with the same method and from the same observed facts, we find no agreement among those who would dogmatize as the existence of lesions in preference to discovering them in the dead-house and with the microscope. Erichsen has collated a large number of cases from various sources to illustrate certain theories of spinal concussion. Page, on the other, pursuing the same clinical method, has drawn largely from the same sources and even from Erichsen's own published cases to support views of a nature directly opposite. Neither writer has utilized modern methods of study, and we are left with the impression that much of this discussion is but threshing old straw, so far as scientific results are concerned. If the conclusions of these older writers are in any measure weakened by being thus at variance, they certainly are still more discredited when it is found that they are at variance with modern ideas.

Nevertheless, the old, not modern views, still exert a deciding influence in many cases of alleged spinal injury which assume a medico-legal aspect, and many an expert has testified in court substantially to the ideas of a quarter of a century ago, in seeming ignorance of the revolution which cellular pathology has brought about in the last decade.

Erichsen is in accord with later writers in stating that when there have been actual structural changes in the cord, well-marked symptoms are developed. He loses sight, however, of the additional fact, that long continued functional disease produces structural change, when he advances his argument in behalf of "railway spine" and claims it is essentially a functional disorder and therefore not accompanied by the usual symptoms following structural change.

Many months, in the opinion of this writer, may intervene between the time of injury and the beginning of the symptoms of so-called spinal concussion. If, however, the two facts are connected, some functional or structural change must have been going on in the interval. If functional disorder cannot exist except transiently, it follows that the disorder must be, or become structural, or else cease to exist. But we have seen that structural disease produces definite symptoms and not vague and irregular phenomena. What becomes then of the theories of spinal concussion which, upon the assumed and wholly imaginary pathological state, known as "anæmia of the cord," build up a symptomatology equally vague and illusory? In this symptomatology have been included all the mental, psychical and cerebral symptoms which a person who has not met with an accident may suffer, as well as all the minor ills of each and every part of the body which could by any stretch of reasoning be traced to the nerve centers, and all are declared to have their origin in a condition of the cord which modern

pathology knows not, or recognizes only as transient.

If it be true that Erichsen's theories of pathology are undermined by the results of more modern investigators, what becomes of the vast superstructure of symptomatology which he has reared thereon? It is essential, if we would be scientific, that we refer only those symptoms to the spine which are known to be spinal. This is now very strongly insisted upon by writers too numerous to quote. No proven facts warrant the belief that mental and psychical disturbances, loss of memory, business inaptitude, depression of spirits and the like, have anything to do with the spinal cord. On the contrary these are truly cerebral symptoms to the best of our present knowledge, and, as such, can be understood and accounted for on plain pathological grounds. Serious they may be, but they are removed from the realm of the mysterious when we recognize their true origin and we can speak rationally of their prognosis and treatment.

But when these cerebral disturbances are referred to that vague state known as "spinal concussion," they seem to take on new terrors, and the patient sees in the diagnosis a dreadful portent of hopeless invalidism or gradual progressive decay. If once he has had Erichsen's picture impressed upon his imagination, he certainly will not lack for material out of which to build a gloomy prognosis. To all intents this writer lays down the opinion that any and every bodily ill may find its explanation in "anæmia of the cord" resulting from "spinal concussion." That this invites not only self-deception, but corrupt practices, we fear there can be no doubt, and such a state of affairs may well be a cause of alarm. Medical men have good reason to fear a condition of things which tends to discredit scientific medicine and the value of expert evidence. Lawyers have good cause to fear a state of affairs which may impose pseudo-scientific doctrine upon the courts in such a way that it cannot be sifted and analysed. Honest claimants are doubly interested in keeping false claims from being allowed to the prejudice of honest ones. Finally, courts themselves have most of all to fear a state of uncertainty in high expert authority, which will invite fraud and defeat the end for which courts of justice exist.

Spinal concussion, when used as Erichsen teaches, is a condition built up almost wholly of subjective symptoms. This renders malingering easy. To illustrate, a man who fears his back has been injured in an accident, consults a lawyer as to the liability of the corporation or individual for the occurrence of the accident. The lawyer—and there is a lawyer to every one hundred men in this city—sends the claimant to a physician—and there is a doctor to every one hundred men in this state—who goes over the ground very carefully with the claimant and asks him if he

suffers from such and such symptoms, and in order that there may be no mistake about it, gives the claimant a written statement of the symptoms usually occurring in well-marked cases of spinal concussion without structural lesion. The claimant, even if he be an honest man, after carefully questioning himself, discovers that he has become the possessor of an inaptitude for business, a mental disquietude, a pain in the back, etc., etc. If he be a dishonest man he studies his chart and has a stock of symptoms on hand when interrogated as to his condition, and in his business, it is "no trouble to show goods." We thus see that the way to imposition is made easy. Avenues of fraud are opened up, and capital, lawyers and courts are practically at the mercy of a clever malingerer. The writers of this paper wish to emphasize the importance of careful and not superficial investigation, and do not believe that the dogmatic precision of an old and inferential pathological which conflicts with modern pathological views, should give answer to the questions arising in alleged injury to the spinal cord.

REMARKS ON MEDICO-LEGAL ASPECTS OF SOME INJURIES OF THE SPINAL CORD.

Read before the Chicago Medico-Legal Society, Oct. 6, 1888.

BY HENRY M. LYMAN, M.D.,
OF CHICAGO.

I have listened with a great deal of interest to the valuable paper of Drs. Burry and Andrews, and I must subscribe most heartily to the propositions advanced in it. It is, as the Doctor has well said, true, that the minds of the profession have for many years been too much under the influence of the dogmas laid down in Erichsen's work on "Railway Injuries." I am thoroughly satisfied that a great deal of injustice has been done and carried out through the agency of the courts upon the basis of opinions that have been formulated in accordance with that book, and I think it is really a very necessary thing to frequently give a word of caution like this to the profession that they avoid falling into the trap which is unwittingly opened before them by such a work. It has been well said that the pathology of the work is old and the inferences drawn from the cases are many of them strained, and yet it must be acknowledged that there is a sufficiency of truth in a good deal that is advanced in it to make the errors that accompany it doubly dangerous. If I were to speak of books in comparison with one another, I should say a book like Page's, while it may be open in many particulars to the charge made against Erichsen's work, of being old fashioned and representing somewhat bygone pathology, of the two it is far the superior work.

It is written in a much more judicial spirit and I think much more really and fully represents the advanced views of the profession in these matters than does Erichsen's work.

My own observation in cases of this kind, leads me to feel that a very large proportion of the cases which have been reported and presented in the courts as cases of spinal concussion are really nothing of the kind; they are cases in which, when there is any real lesion, where any real injury has been sustained, it has fallen more largely upon the brain than the cord. Many of the symptoms presented by these patients can be much more accurately described by supposing the brain is the organ that has suffered. It is in cases of this class that so many of the numerous and ill-defined symptoms following an injury, occur; patients who suffer with no systematized lesions, with nothing that can be referred to any disorganization proper of the spinal cord, no true paraplegia or hemiplegia; the lesions are those largely of an irregular distribution where the phenomena are largely mental, and possibly, in many cases, intellectual, and we must refer them chiefly to the brain rather than the spinal cord. It is true of a great many of these cases that the symptoms presented are of this character instead of being symptoms of paralysis either of sensation, motion or nutrition.

We have a large class of cases presenting themselves after these injuries to which the most convenient term we can apply is hysterical; hysterical conditions following injuries. These occur in males as well as in females. We perhaps have more right to expect the existence of hysteria in females who have suffered injury, but many cases of males who have suffered injuries are followed by hysteria, which can only be ascribed to disorders of the cerebrum. In regard to these so-called hysterical symptoms—how far are they to be allowed weight in judging of the liability of a railroad? For example, in the case of an injury that has been sustained, the courts will hold that it matters not what the form of the disorder is, so long as there is a disorder, for the disorder is the consequence of the injury that has been sustained, and the party inflicting the injury is liable for it. There is a certain amount of truth in that proposition; it but must be taken into consideration that disorders of this kind are most intensely liable to exaggeration as a consequence of the peculiar conditions which surround patients who have undergone the experience passed through by the victims of a railroad accident. The injuries are of a nature to disturb the mental functions of the individual, and the anxieties that grow up, partly through the agency of physicians, and partly through the uneasiness attendant upon law suits connected with the railroad company, or parties implicated in the accident, lead to disturbances of the mind to a great extent, and we

should take those things into consideration in our estimation of the probabilities of recovery.

It is a matter of common observation, that when patients have been injured in this way and manifest these mental and intellectual symptoms conjoined with a certain amount of vital innutrition and disorder, when the mental perturbation has been removed there is a great improvement in the symptoms; so that the settlement of a claim against a railroad company is followed by a rapid improvement in the condition of the patient. That is a fact which is often laid hold of by a certain class of physicians and surgeons and used as an argument against the genuineness of the sufferings experienced by the patient. They say it was a matter of imagination, of self-deception, and sometimes go so far as to claim a form of malingering by the patient. But if you reflect upon the relation which exists between the mind and body, it is easy to understand how a person who is in anxiety of mind will suffer, in an aggravated degree, bodily symptoms, and will improve again. It must be kept in mind that many of these patients are really permanently injured, though they have not received any injuries that are enduring from a surgical point of view. There have been no fractures, perhaps; no permanent strains or sprains or dislocations; no wounds anywhere, no depressions of the cranium, or anything of that kind. Many of these cases, therefore, when they have passed out of the immediate care of the surgeon are considered cured, and surgically speaking they are cured; but we must remember a case may be cured surgically and yet not cured medically, and, therefore, a certain class of patients must be recognized as never recovering fully from these injuries; they recover surgically and to a certain degree medically; but, as in a case of inflammation of the spinal cord, when a patient is suffering from myelitis we get a recovery to a certain degree, in the majority of cases, but rarely a complete recovery.

The patients get to walking about with more or less degree of comfort, but never recover the power of locomotion they once had; they have not the power of endurance they once had, and in every respect they are weaker and inferior in their condition to what they were before the injury was sustained. That is something that should be recognized and kept in mind, therefore, that the opinions of physicians and surgeons who are called to examine these cases for injury, should be guarded. I do not know that there are any class of cases in which it is more improper to give a positive prognosis, than in those of severe injury. The probabilities are in favor of partial recovery, that the recovery will be progressive; and yet in every instance the possibility exists that the recovery will be arrested short of complete restoration, and it is impossible, so far as my knowledge extends, to judge in any particu-

lar case whether it is going to be a case that is completely curable or whether it will come to a standstill before recovery has been completed. There is a class of cases in which the difficulty is principally mental, and those cases may recover completely, I think; and yet it is not possible for the physician to predict positively in those cases, at an early period, that they are going to be of that curable character. And yet where there is no palpable lesion, no evidence of disorganization of the brain or spinal cord; where the female sex is present, especially in a person of comparative youth, and where there is the possibility of complete change of life and occupation coming in to assist, the prospects of recovery are good.

I remember a case related by Dr. Wood, of Philadelphia, where a young woman had sustained an injury in a railroad accident. She had been examined by numerous physicians who had all given an unfavorable prognosis; not less than ten neurologists assured her she would never recover. That woman came under the care of Dr. Wood and he assured her there was nothing but hysteria the matter, and put her upon a course of treatment; and finally she engaged in a love match which terminated in marriage and she was completely cured. I think there is nothing so good as something to absorb the patient and turn the current of thought entirely from oneself and maladies, into another channel; it is the very best influence toward restoration of health to the mind; and in many of these cases it is a mental disorder that exists. I do not wish to take up the time of the Society, but would call attention to the fact that there is a class of people who are in such a state of mental instability that it needs only an excess or injury of some kind to start them upon a course of mental disorder which will have, we know not what termination. In patients of that class, injured by railroad disaster, followed by unfavorable opinions of men in high standing, and by long litigation, nothing is better calculated to set up a state of ill-health, the termination of which can never be predicted.

PROFESSOR HEINRICH VON BAMBERGER died at Vienna on Nov. 9 after an illness of several weeks' duration. He was born in 1822, near Prague. In 1850 he went to Vienna to work with Oppolzer, but went to Würzburg in 1854 as Professor of Clinical Medicine. Upon the death of Oppolzer he returned to Vienna, and in 1872 was appointed Director of the Medical Clinic in the Allgemeines Krankenhaus. Bamberger was an exceptionally gifted man. As Nothnagel recently said of him: "He thought as a *savant*, and practiced as an artist. Therein lies the secret of his fame as a physician, as diagnostician, and as clinical teacher. . . . The name of Bamberger, the clinician, links itself brilliantly to those of Skoda and Oppolzer."

MEDICAL PROGRESS.

THE MILK-CURDLING FERMENT OF THE STOMACH.—DR. E. G. JOHNSON has studied the action of the milk-curdling ferment of the stomach in the clinic of Professor Riegel of Giessen, and subsequently in the Sabbatsberg Hospital, Stockholm. Researches were made in 24 cases on the presence of the ferment and the pathological conditions relative to it. Fourteen of these patients suffered from hyperacidity, accompanied in four of them by moderate dilatation of the stomach. In one of these latter there was also hypersecretion of the gastric juice. One case had considerable dilatation of the stomach with hyperacidity and marked hypersecretion. In three cases the dilatation was insignificant, but there was hyperacidity, complicated in one case by slight, and in another by very great, hypersecretion; in the third case the hyperacidity was accompanied by chlorosis. Three other patients suffering from hyperacidity were also the subjects of gastric ulcer. Dr. Johnson also examined four cases of hyperacidity with neither dilatation nor hypersecretion, of whom three were chlorotic; a case of catarrhal jaundice, four cases of severe chronic dyspepsia, and five cases of carcinoma of the stomach. The contents of the stomach were removed while the patient was fasting, and also four or five hours after food had been given for the purpose of the observations. Dr. Johnson sums up his researches as follows: 1. The milk-curdling ferment is a constant product of the glandular secretion of the stomach, and it is met with at all periods of digestion except in cases of cancer of the stomach, in which it is never found. 2. The ferment was also found in the hypersecretions of the gastric juice of a fasting patient after his stomach had been washed out the previous evening. 3. Gastric juice which contains hydrochloric acid, and which when neutralized causes coagulation of milk, does not appear to be affected in its action by the greater or less amount of acid contained in it at first. 4. The milk-curdling ferment does not pass into the urine. 5. The ferment is easily destroyed by an excess of alkali, and it is probably on this account that it does not pass into the feces under normal conditions. 6. During fever the ferment appears to be absent from the stomach. 7. The ferment causes coagulation more slowly in boiled than in fresh milk. 8. During the coagulation of milk by the ferment the reaction remains neutral, and lactic acid is not met with after coagulation.—*The Lancet*, Nov. 17, 1888.

ALCOHOLISM.—DR. LEWIS D. MASON discusses, in the *Quarterly Journal of Inebriety*, the etiology of dipsomania and heredity of alcoholic inebriety. He has collated a large amount of testimony bearing on this subject; and from this, and from

his own experience, which has been very large, he draws the following conclusions: first, alcoholism in parents produces a degenerate nervous system in their children, and subjects them to all forms of neuroses, epilepsy, chorea, paralysis, mental degeneracy, from slight enfeeblement to complete idiocy and insanity; second, alcoholism in parents produces a form of inebriety in their children known as dipsomania, which in the large majority of cases is inherited in the same manner that other diseases are inherited, and we can with propriety and correctness use the term "alcoholic or inebriate diathesis" in the same sense that we use the term "tubercular," or other terms indicating special tendencies to other inheritable diseases.

TREATMENT OF PNEUMONIA BY DIGITALIS.—M. PETRESCO has treated a large number of cases of acute pneumonia with great success by the administration of four grams of digitalis leaves in infusion every half-hour, by mouth. The infusion is prepared with 4 grams of digitalis leaves to 200 grams of water and 40 grams of syrup. The disease is generally checked in three days. The fever and all the physical phenomena, local as well as general, disappear rapidly. In spite of the large doses he has never seen poisonous effects, tolerance having been uncontestedly proved by 577 observations. By this treatment it is claimed that the mortality of pneumonia has been reduced to 1.22 per cent.—*Lyon Médical*, October, 1888.

TREATMENT OF INFANTILE DIARRHŒA.—ZINNIS recommends for the diarrhœas of childhood, particularly the cases characterized by green evacuations containing undigested casein, the withdrawal of all starchy food, and the following mixture:

Aquæ scœnicæ	75 parts.
Liquor. calcis	6 "
Bismuth. subnit	3 "
Syr. aurant. flor	15 "

℞.

S. Give a dessert-spoonful every 2 hours.

—*Deutsche Med. Wochenschrift*, Sept. 6, 1888.

USES OF CREOLIN.—LICHTWITZ thus sums up the uses of creolin: It is an antiseptic, a disinfectant, a hæmostatic, and non-poisonous in doses as large as 120 grains. In gram doses in capsules it is useful against *tenia solium* and *oxyuris vermicularis*. Its action is excellent in parasitic skin diseases, and in eczema. Given internally it is a valuable antifermentative. It may be used by inhalation in laryngeal and tracheal troubles, and the powder may be applied locally. Creolin powder has a good effect in some cases of keratitis.—*Nouveaux Remèdes*, October, 1888.

THE
Journal of the American Medical Association.

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, DECEMBER 15, 1888.

THE AMERICAN ACADEMY OF MEDICINE, AND
MEDICAL EDUCATION.

In reading the abstract of the proceedings and papers presented at the recent annual meeting of the Academy, in THE JOURNAL of the 8th inst., we noticed some statements calculated to convey impressions not in strict accordance with the facts of history. It is natural and commendable for members of any legitimate society to magnify the importance and influence of the society to which they belong, provided they do not detract from the labors of others or use such expressions as lead to erroneous inferences. The abstract to which we have alluded represents the writer of "A Few Words Concerning the Academy" as making the following statement: "The Academy was organized in 1876, at a time when the standard of medical education was at its *lowest point*. Medical institutions were numerous and their doors thrown open to all, irrespective of qualifications. . . . It was at this period that the Academy began to explore these novel methods of manufacturing medical practitioners."

If the writer of these statements will turn to the "Reports on a Uniform Standard of Medical College Requirements, and on Medical Education," contained in the first volume of the Transactions of the American Medical Association, 1847-8, he will find that the standard of medical college education at that time, demanded no preliminary education, and attendance on only two

courses of college instruction averaging sixteen weeks each, the minimum being thirteen and the maximum eighteen weeks. Less than half of the colleges required attendance on any clinical instruction, and only one-third made dissections obligatory upon the student. This being the standard of medical education in 1846, if it continued to deteriorate during the succeeding thirty years and reached its "*lowest point*" in 1876, it must have required a microscope to find where it was at that date, when the Academy came into existence. But what are the facts? At almost every succeeding annual meeting of the American Medical Association an able report on the subject of medical education was made and discussed until 1866, when it culminated in the recommendation that a convention of delegates from the medical colleges alone be held for the purpose of maturing and adopting a uniform plan and standard of medical education. The convention was held in Cincinnati, May, 1867, and was presided over by the eminent Alfred Stillé, Professor of Practice of Medicine in the University of Pennsylvania. During three days of earnest and harmonious deliberation, a full graded three years' course of medical college instruction, including a fair standard of preliminary education before commencing medical study, practical anatomy, and hospital clinical instruction was adopted, and laid before the faculties of all the colleges in this country. A second convention was held in May, 1870, the whole subject again discussed and the same liberal graded plan was re-adopted, and the same received the unanimous sanction of the American Medical Association. In the meantime the Chicago Medical College had been established in 1859, seventeen years before the organization of the American Academy of Medicine, with a three year graded system and six months college term, and in 1871, five years before, the Medical School of Harvard University adopted the same, to be soon followed by the Medical Department of the Syracuse University, and the old University of Pennsylvania. The colleges generally had increased the length of their college terms and the number of their professorships. Indeed, it was the steady progressive development of professional opinion by the reports and discussions in the American Medical Association, the college conventions alluded to, and the State Medical Societies, during the thirty years following 1846,

that made it possible to organize and maintain the American Academy of Medicine in 1876, and the Illinois and many other State Boards of Health since.

THE MEDICAL COLLEGE OF VIRGINIA.

In another department of this week's issue of THE JOURNAL will be found a letter on this subject from DR. J. S. DORSEY CULLEN, Dean of the Faculty of the Medical College of Virginia. The first paragraph of the letter is of such nature that we would be fully justified in refusing to publish it. The English language is broad and flexible enough to permit one to be severe and critical without being offensive, or violating its rules of orthography and syntax.

As every one must know, individuality is dropped in editorial writing. It is a well-settled principle that the editor of a journal is responsible for unsigned articles. While the editor may not write all that appears in his editorial pages, whatever appears therein has his full consent. An editor cannot allow personal prejudices to direct or influence articles for which he is responsible. Dr. Cullen's position of claiming to respect THE JOURNAL, but at the same time caring nothing for an opinion expressed in its editorial columns, and opening his letter with an offensive paragraph, is, therefore, as paradoxical as his first sentence is ungrammatical.

Whether or not the statements made in THE JOURNAL concerning the Medical College of Virginia are "flagrantly at variance with the truth," we leave our readers to judge from the facts already and to be presented. Dr. Cullen states three charges made against the College *by its enemies*. THE JOURNAL is not an enemy of this College, and does not feel itself called upon to take part in a personal controversy between the College and its enemies. It does feel called upon to expose any medical college that graduates incompetent men; it has that right, and will do so whenever it has the facts to go upon.

Dr. Cullen seems to have misunderstood the charges made by THE JOURNAL against his College. Briefly they were as follows: 1. That it has, with some other medical colleges, done bad work by graduating incompetent men. 2. That it was, at least from January, 1888, to the time the editorial articles appeared in THE JOURNAL,

opposed to the Medical Examining Board of Virginia. 3. That in January, 1888, the bad work of the College was practically admitted by the fact that the students of the College, supported unofficially by members of the Faculty, went before a committee of the Virginia Legislature and asked that the students of the Medical College of Virginia be exempt from the State Examinations. We did not say that the Faculty of the College was opposed to the *establishment* of a State Medical Examining Board; we knew the contrary, as shown in THE JOURNAL of Sept. 8, p. 346. In the same issue we stated the so-called reasons given by the students of the College to the Legislature why their graduates of the College should be exempt from State examinations. Some members of the Faculty must certainly have seen the preposterous document of the students; and that the students were allowed to stultify themselves by it without protest from the Faculty is at least presumptive evidence that the Faculty considered it a proper article to emanate from their College. The members of the Faculty should have considered it a duty to say to the Legislative Committee that they could not approve of the memorial presented by the students.

The facts already presented in THE JOURNAL, including the table in Dr. Cullen's letter, already published in our issue of Nov. 24, p. 746, are proof enough that the Medical College of Virginia has not done good work since January, 1885. The table shows that some other colleges have done worse work; but it is no excuse for grand larceny that some one has committed murder. Dr. Cullen is quite right in saying that the Medical College of Virginia "had the smallest number of graduates rejected of any college whose number of applicants were (was?) equal to it (?)," seeing that no other college had an equal number of applicants by 23. Dr. Cullen finds that about 7 per cent. of the graduates from the Medical College of Virginia have been rejected by the Virginia Board. We believe that 8 is not "about 7 per cent." of 57, but 14.03 per cent. We did not find it necessary to establish the bad work of this College by comparing its work with that of other colleges; 14.03 per cent. of rejected applicants before the State Board is quite enough evidence of bad work.

If Dr. Cullen wishes to know why more was said of the Medical College of Virginia, in our

editorial articles, than of other colleges doing as bad or worse work, we may say that it was because the Faculty officially endorsed the establishment of the State Board of Examiners, and afterwards individually opposed the Board before the Legislature; because of the action of the students of that College in petitioning the Legislature of Virginia to exempt its graduates from the State examinations, and their reasons therefor; because the Faculty did not protest against this petition, and because of the statements made to the Legislative Committee by members of the College Faculty. The action of the students was substantially, though unofficially, it is said, endorsed by the members of the Faculty (except Drs. John N. Upshur and Geo. Ben. Johnston). If Dr. Cullen does not remember what the members of the Faculty said before the Legislative Committee, we can refresh his memory by publishing their statements. In regard to the misstatements refuted by Dr. Cullen at Norfolk, we can only say that none have been made in *THE JOURNAL*; and as to the statements that we have made, they have been refuted neither at the Norfolk meeting nor in the letter from Dr. Cullen in this issue.

We noted with pleasure the position taken by Dr. Cullen at the Norfolk meeting of the Medical Society of Virginia in regard to the State Examining Board. Inasmuch as he represents the Faculty of his College, until there is evidence to the contrary we shall accept his action as a promise that the Medical College of Virginia has entered upon an era of better work.

THE DIETETIC USE OF SACCHARIN.

In a recent number of the *Lancet* Drs. THOMAS STEVENSON and L. C. WOOLDRIDGE record some experiments made to determine whether saccharin is poisonous or not when given in excessive quantities; and if it is not poisonous under these or other conditions, whether its use in moderation interferes with the digestive processes, so as to render it advisable to forbid its use as a substitute for sugar. Saccharin is not a food in any sense; but it is recognized that there are many circumstances under which it is necessary to have a sweetening agent to take the place of sugar. As to the non-toxic nature of saccharin the experimenters have no doubt, since their experiments confirm those of reliable investigators on the Con-

tinuit. Saccharin has decided antiseptic properties, and in sufficient quantities is capable of stopping the action of organized ferments. As regards its extracorporeal action on the soluble ferments, as regards the peptic digestion of fibrin 0.1 per cent. of saccharin has no retarding influence, while 0.25 per cent. slows the process decidedly, and 1 per cent. greatly retards it: 0.1 per cent. of saccharin is equivalent to 30 per cent. of sugar, which may be said to be a dietetic impossibility. The diastasic solution of starch is not hindered by 2 per cent. of saccharin. The addition of saccharin to urine hinders ammoniacal fermentation—as does ingestion of saccharin.

As regards the intracorporeal action of saccharin, it was found that a gram of the substance, equal to more than eight ounces of sugar, did not interfere in the least with the gastric digestion of the dog. The article used in the experiments was "soluble saccharin," equal to about nine-tenths its weight of pure saccharin. It is as soluble in water as table salt, and when properly diluted is scarcely to be distinguished from cane sugar. Drs. Stevenson and Wooldridge conclude that (1) saccharin is quite innocuous when taken in quantities largely exceeding what would be taken in an ordinary dietary; (2) it does not interfere with nor impede the digestive processes when taken in any practicable quantity; (3) it may be taken during an extended period without interfering with the digestive and other bodily functions. There is, then, no reason to think that its continual use may be in any way harmful.

EDITORIAL NOTES.

AN ARMY MEDICAL BOARD will be in session in New York City, N. Y., from May 1 to 31, 1889, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination by the Board will make application for the necessary invitation to the Secretary of War, before April 1, 1889, stating the place of birth, place and State of permanent residence, and enclosing certificates based on personal knowledge from at least two persons of repute, as to American citizenship, character and moral habits. Testimonials as to professional standing, from Professors of the Medical College from which the

applicant graduated, and of service in hospital from the authorities thereof, are also desirable. The candidate must be between 21 and 28 years of age, and a graduate from a *Regular Medical College*, evidence of which, his Diploma, must be submitted to the board. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

ISOLATING "LUMP-JAW" CATTLE.—The Secretary of the State Board of Live Stock Commissioners reports that the Agent of the Board at the Union Stock Yards, Chicago, has, since the 15th of October, when he was placed there, isolated 148 cattle diseased with lump-jaw, and all but one of these have been slaughtered by the owners without cost to the State, thus preventing their going into the country to again spread disease. The action of the Yard Company in ordering the carcasses tanked has prevented the placing upon the market of diseased meat, which is likely to convey the disease to human beings. The Stock Yard officials and the commission men generally are co-operating heartily with the State Board in preventing the spread of the disease by absolutely refusing to handle any animal affected with the disease. The Board of Live Stock Commissioners has placed an agent at the National Stock Yards at St. Louis to inspect and isolate diseased cattle.

A NEW URINAL has been invented by a German firm. The long bag, which hitherto was hanging in an uncomfortable manner the whole length of the leg, is done away with, and its place taken by a bag attached to the waist and extending horizontally, the urine being kept at the bottom of the bag and spreading over its entire width, instead of accumulating at one point. Moreover, a pump and sucking apparatus is connected with the urinal for the purpose of making the reservoir air-tight and allowing the urine to flow very quickly by means of a valve into the lower part. The discharge is effected in a comfortable, very clean, noiseless and non-conspicuous manner, the emptying hose being mechanically opened, when the fluid runs away to the last drop.

ABNORMALITY OF THE AORTIC ARCH.—At the meeting of the Anatomical Society of Great Britain and Ireland on Nov. 7th, Mr. Gordon

Brodie related a case of abnormality of the aortic arch, in which the innominate arteries (?) were absent, being replaced by a short, thick trunk, which gave off two branches ascending on either side of the trachea to the place of the common carotids, that on the right giving off one corresponding to the vertebrae. Next in order from the arch was the left vertebral, which entered the foramen in the transverse process of the fifth cervical, and gave a branch to the thyroid. Another branch arose from the first part of the subclavian on the left side. The right subclavian arose as a fourth branch from the arch, and passed behind the oesophagus and trachea.

THE PROFESSION IN NEW MEXICO.—The Territorial Board of Medical Examiners of New Mexico made its report to the Governor on Nov. 29. There are 1,291 persons practicing medicine in the Territory. Of these 834 are regulars, 151 homoeopathic, 44 eclectic, and 264 non-graduates entitled to certificates owing to length of practice in the Territory. The Board revoked two licenses during the year, one for unprofessional and immoral conduct, and the other for passing a forged diploma and obtaining a license to practice. Eight have been obliged to leave the Territory to avoid prosecution under the act.

FALSE CERTIFICATE OF DEATH.—A physician in St. Paul, Minn., recently gave a certificate of death to the city health department, in which "sore throat" was given as the cause of death. The Health Officer, Dr. Kilvington, refused to accept it, and the physician then substituted "scarlet fever" for sore throat. The case should receive, and doubtless will have, full investigation. This kind of evasion of the law is both criminal and contemptible, and richly deserves punishment. Other cases of failure to report contagious and infectious diseases, are reported from St. Paul and Minneapolis.

INTUBATION OF THE LARYNX.—Dr. F. E. Waxham reports fifteen cases of intubation recently coming under his care, with ten recoveries, or 66 per cent. Out of a total of 173 cases there have been fifty-three recoveries, or 30 per cent., and of his last fifty cases there have been twenty-two recoveries, or 44 per cent.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION met in Birmingham on December 4, with a large number in attendance.

SPECIAL ARTICLES.

HISTORY OF THE SEAL OF THE NINTH
INTERNATIONAL MEDICAL CON-
GRESS AND OF THE COMMEM-
ORATIVE MEDAL OF THE
CONGRESS.

As it may, at some time, be of interest to know the origin and history of the seal of the International Medical Congress of 1887, and also of the medal struck to commemorate the Congress, it is essential to collect the data now, and put the facts on record. This can be done most accurately by publishing the letter of Dr. J. M. Toner, written at the time to Prof. Henry H. Smith upon the subject. This letter, with the addendum, is supplied at our request, and furnishes a complete history of the matter. To make the history more complete, we append correct cuts of the two sides of the medal.

WASHINGTON, D. C., April 20, 1886.

PROF. HENRY H. SMITH, M.D.,

*Chairman Executive Committee of the Ninth
International Medical Congress:*

Dear Doctor:—Your letter requesting me to prepare a design for a suitable seal to be used on the official papers and publications of the Ninth International Medical Congress which is to meet at Washington, D. C., September 5, 1887, has been received. In addition to the seal, I fully agree with you in the sentiment that the occasion of the assemblage of representative medical men from all the civilized nations of the earth, gathered at the Capital of the United States, will be so notable an event as to deserve to be commemorated by a suitable medal. Since the receipt of your letter I have given such thought to the subject as I could, and have now the honor to submit for your consideration the enclosed drawings as a design for one side of a medal, and I propose that the same figures be engraved and used as the seal to be attached to official documents by the officers of the Congress. For the reverse of the medal I suggest that a figure of the head of Washington be adopted. A most excellent specimen of portraiture in medallion art is that of the head of this, the greatest man the world has produced, modeled from the Houdon plaster cast which was taken of him during life and engraved at the United States Mint in Philadelphia. This die or model can, I have no doubt, be obtained for your purpose. Washington's bust will properly symbolize the New World and our progress in civil government, as well as the arts and sciences in our country.

If, however, the bust of Washington does not seem to your committee as appropriate, then I propose that the symbolic figure of Europe and America, a rough sketch of which I enclose, be substituted. The group of figures on the medal

is intended to symbolize medicine. *Æsculapius*, the inventor of the art, is here represented as of noble and venerable form, draped in classic costume, seated, holding his staff entwined by a serpent, and attentively examining a sick child, which a mother seated on a low stool holds upon her lap. Two men are represented as standing soliciting the services of the physician, one with a staff and a bandaged head, the other supporting himself upon a crutch. The only accessory to the figures evoked by the artist is the Roman altar which is placed partly behind the chair of *Æsculapius*, and around which twines a serpent in the act of depositing a medicinal plant in a cup upon the altar. To typify medicine the classic figure of *Æsculapius*, which tradition and the arts have brought down to our time, has been accepted. The serpent and the other emblems which usually accompany his portrait are of classic origin and will be readily understood by the student of medicine, so that it is scarcely necessary to describe them, and yet a brief reference to their meaning as given by the ancients may be pardonable. It is known to scholars that *Æsculapius*, the god of medicine, was claimed to have been of divine origin—the offspring of Apollo and Coronis. The mother, concealing her pregnancy, withdrew to the forest in the neighborhood of Epidauris, and there brought forth a son and left him exposed on the mountain. The child was preserved by a stray goat, which nourished him with its milk, while the goat-herd's dog guarded him from injury. A shepherd watching his flock discovered the child, but was alarmed at seeing the infant surrounded by a resplendent halo of light, and fled, proclaiming that he had found a divine being. The infant was taken by Trigona, the wife of the goat-herd, and carefully reared until he reached an age to profit by the teachings of the famous Centaur, Chiron, under whose instruction *Æsculapius* attained wonderful proficiency as a physician. His great knowledge of the healing virtues of plants and other substances, and his skill in curing diseases and in the treatment of wounds, at length elevated him in the esteem of the age to the dignity of the inventor and god of medicine. The worship of *Æsculapius* was first established at Epidauris, and afterwards spread to and throughout Greece. In the beginning he was adored under the form of a serpent, though subsequently many statues were erected in the human form to his honor. The serpent is the symbol of renovation and eternity everywhere in classic sculpture, and graphic representations accompany the god of medicine. It is also the accepted symbol of health and life, and in one or another position is represented in all the statues of the god, and usually twining around his staff. One of the traditions as to the origin of this association of the serpent with the god of medicine is the following: While *Æsculapius*

was in the house of Glaucus, whom he was engaged to cure, and while standing with his staff in his hand absorbed in thought, a serpent came and twined around it, which he killed. Shortly after another serpent came, carrying in its mouth an herb, by the touch of which it recalled to life the one that had been killed. Æsculapius, observing the restoration of the dead serpent to life, took the same plant and used it with like effect in restoring health and life to men. This power, however, offended Pluto, because it diminished the number of the dead. Zeus therefore killed Æsculapius with a flash of lightning but, at the request of Apollo, he was placed among the stars.

Æsculapius is frequently represented standing, but a few classical groups exist which show him seated; one on a throne with his daughter Hygieia, the goddess of health, feeding a serpent, and Telesphorres, one of the minor gods who presided

once the sympathy of the beholder. The two men of good figure present evidences of requiring the skill of the physician, and add to the effectiveness of the group. The Roman altar with the serpent depositing a medicinal plant in the cup is classical in its origin and assists to complete the symbol of the origin of medicine.

Should your committee deem it wise to arrange for a medal I trust you will have it executed in the best style known to the art, and that it be left optional with the members to subscribe for it or not as they may elect. The taking of the medal of the Congress of 1881 in London was entirely voluntary. Its cost was five dollars. The one proposed for the Ninth Congress will cost the same; this amount to be paid at the time of registering. The medal to be delivered to subscribers as soon as it can be made.

The London medal had on one side the same



over convalescence, dressed in a monk's cloak and hood, standing by her. As accessories, artists have availed themselves of the figures of the goat and the dog which nourished and protected the infant god, and also of the cock which was frequently sacrificed to Æsculapius. But none of these have been introduced here. The head of Æsculapius, as represented in the best antique statues, much resembles that of Apollo, the features regular and of benevolent expression, the hair trained to ascend from a massive brow, parting in the middle and then falling down over the temples in a profusion of curls like the mane of a lion, and wearing a full though short and curling beard. The effect obtained by the artist in this group is pleasing. The pose and figure of Æsculapius is good, and his seated attitude gives him the air of earnest benevolence in the exercise of his humane office. The infant as presented by its mother enlists at

symbolical figure which appears on the seal of that Congress, and on the reverse side the bust of the Queen.

I would further suggest that you would submit the drawing for the medal to Mr. Barber, designer and engraver in the United States Mint in Philadelphia, and make inquiry of him as to size, cost, and the use of the model of the head of General Washington which I have referred to. He could give your committee at once an approximate estimate of cost, and thus enable you to come to a speedy conclusion of the matter.

Hoping to have the pleasure of greeting you and many old friends at the meeting of the American Medical Association in St. Louis in May, all full of wisdom and fortitude to work to the end of making the Ninth International Medical Congress a grand success, I remain, Yours very truly
J. M. TONER.

ADDENDUM, SUPPLIED BY REQUEST.

The design for the medal submitted as described in the foregoing letter was adopted by the Executive Committee as the seal of the Congress, yet they did not feel warranted in assuming the financial risk involved, and left the whole project of the medal to the registrar. The propriety of having a suitable medal engraved to commemorate the occasion seemed to be beyond question, and to justify the placing of a special notice regarding a commemorative medal at the bottom of the registration blank used by applicants for membership. This form to be filled up or not as members might choose to become subscribers. This view of obtaining the sense of the members of the Congress on the matter was approved by the Secretary-General, Dr. J. B. Hamilton, and that course adopted. The notice promised that a medal equal to that of the Congress at London would be ordered if a sufficient number were subscribed for at five dollars apiece to cover the expense, but if the medal was not ordered the money would be returned to the subscribers. A sufficient sum was raised to engage the services of Charles E. Barber, an eminent engraver and medallist employed in the United States Mint at Philadelphia, to re-draw the group of figures submitted and to place the following inscriptions in raised letters upon the face of the medal. The figures have been fully described in the letter to Dr. Smith. The inscription in a straight line beneath the group symbolizing medicine is, "*Washington, 1887*," above and encircling the group, reading from left to right, "*International Medical Congress*," beneath and completing the circle, reading from left to right, "*N. S. Davis, Pres. J. B. Hamilton, Sec.-Gen. E. S. F. Arnold, Treas. J. M. Toner, Reg.*" The reverse side of the medal contains a noble bust of Washington, and in a circular line above the head the inscription, "*United States of America*," beneath in a circular line, "*Founder of the Republic*." The artist has been eminently successful in producing a beautiful specimen of medallie art, which we hope in a degree appropriately commemorates the Ninth International Medical Congress, and will at the same time be an acceptable souvenir of the occasion.

J. M. T.

CASES OF SUDDEN DEATH IN NURSING INFANTS.¹BY PROF. PAUL GRAWITZ,
OF GREIFSWALD.[Translated² for the author by S. N. NELSON, M.D.]

The object of this communication is to call attention to a group of cases of death in nursing infants, which are of interest, because healthy

children died with the symptoms of suffocation without any preliminary evidences of disease. I have observed two such cases which throw some light concerning the cause of death. According to my idea, a greatly enlarged thymus gland is the real explanation of the sudden asphyxia in both cases.

The first case occurred about four years ago in Berlin. A child about 8 months of age was entrusted to the care of a servant girl. One morning this child, which hitherto had been entirely healthy, was found dead in bed. The feather coverlid, with which the little one was covered, seemed to be drawn somewhat high up over the mouth of the child. On account of these circumstances the attending servant girl was accused by the parents, and criminal proceedings were commenced against her for her carelessness. In consequence of this a judicial autopsy on the body was ordered, which I had the opportunity of conducting in conjunction with Professor Liman.

The little body was well developed and well nourished, and no traces of external injury could be found anywhere. Within the skull there was nothing abnormal. On opening the pleural cavity there presented a thymus gland of unusually large size, which covered over the greater part of the pericardium like a flat tumor, and which extended on both sides somewhat high up in the neck toward the thyroid gland. The gland had a lobulated structure and its surface was of a bright red color, studded everywhere with little punctiform hæmorrhages. On section similar little petechiæ could also be recognized in the interlobular tissue. In the pericardium, and also occasionally in the pleura, there were likewise found little extravasations. The heart was of normal appearance, the lungs were crepitant and entirely normal, and there were no foreign contents in the large or small bronchi. There were no changes worth mentioning in the organs of the abdominal cavity.

The preliminary opinions of both operators were that the child had died of suffocation. The proximate circumstances under which death followed we left undecided.

In the oral proceedings which followed it was established that the coverlet had not encumbered the face of the child to any unusual degree, and then it became necessary for both of us experts to explain more clearly the cause of the suffocation. In this respect our opinions differed; for while Professor Liman attached no special importance to the relations of the thymus gland, I believed that this was the cause, although I had had no special experience in similar cases. Therefore I gave this to be my opinion before the judges, and insisted that I was obliged to attach much importance to the very abnormal size of the gland, since its anatomical position³ must have produced ex-

¹ A discourse delivered before the Stralsund Medical Society.² Deutschen Med. Woch., 1888, No. 22.³ In the skeleton of a child 8 months old, I find the distance

cessive pressure on the larger bronchi and the vessels lying behind it, and on this account it was not necessary to ascribe the death of the child to a crime.

The judges acquitted the accused servant; but they expressly declared that the judgment was given from lack of positive proof independent of the opinions of the experts.

Since that time until the present I have never met a case in which I could ascribe the death of the child to the thymus gland, although I have always had it in mind. I have just met a second case which in clearness exceeds the first in many respects.

§ The daughter of Mr. J., in Greifswald, was a strong, well-nourished and lively child, 6 months old, who had never suffered from cough or any other illness. On the 20th of April of this year the parents of this little child were rejoicing. The father held it in his arms and was playing with it in the presence of some relatives. Suddenly the child was seized with difficulty of breathing, the face became livid, the fists clenched, and in a few minutes the child was dead. One of those present, an experienced nurse, immediately attempted to restore the child by artificial respiration, but it was in vain. The death certificate was made dependent upon the result of the autopsy, which I performed on the 21st of April.

Report of the Autopsy: The body of the child showed externally no traces at all of any injury. The skin of the face, on the body, abdomen and arms is white; on the back and legs livid. The subcutaneous fat is extremely thick. On the thorax can be felt a plain rosary of rickets. The thorax is broad, the abdomen somewhat swollen. The muscles are in rigor mortis.

On opening the abdominal cavity the small intestines filled with gas press forward, the serous covering is grayish white, delicate, and in several places the light rose colored Peyer's patches show through. In the abdominal cavity there are no foreign contents. The diaphragm on both sides in the mammillary line is at the lower border of the fourth rib. *Under the sternum lies a thymus gland of unusual size.* It covers the greater part of the pericardium with two lobes held together in the median line by connective tissue. It forms a thick cap over the heart with the concavity inwards.

Upwards the left lobe becomes gradually narrowed, but the right one, interrupted by a constriction, proceeds as a long process, which ends tapering. The greatest length from this process to the base of the thymus is 7.5 cm., and the greatest breadth over the pericardium 6 cm., the thickness (about 1.5 cm.) is difficult to determine, since at the level of the division of the bronchi, a

somewhat thick accessory lobe projects from the left lobe and is separated from the chief lobe by a constriction; but it partially overlaps it and thus adds to the thickness. *Diameter from before backwards on a level just below the manubrium, is less than 1.8 cm.; the color is gray-rose, sprinkled with numerous superficial petechiæ of fresh red color; the consistency is somewhat hard; the heart is relatively large and strong.* In the visceral pericardium are numerous red extravasations of the size of the head of a pin. The muscles of the heart, the valves, and the foramen ovale are normal. In the cavity is considerable fluid blood, as also in the vena cava and in the veins of the neck.

The organs in the neck are removed in connection with the lungs. The mouth and pharynx are empty and so is the opening of the larynx, the trachea and the large bronchi. The epiglottis shows an exquisite lateral compression (asphyxiated position of Virchow). Its mucous membrane, like that of the pharynx, is congested. The interior of the larynx and the upper part of the trachea are of a considerably brighter red color, and a more marked injection commences just over the bifurcation, which corresponds to the narrowest spot between the sternum and the vertebral column. In the large and small bronchi there is some clear reddish froth, the lungs are considerably collapsed, everywhere containing air, bright red, and here and there on the surface are little blebs of interstitial emphysema. The œsophagus is empty. In the stomach are some milky contents and a considerable accumulation of gas. The mucous membrane is of a pale grayish white. In the intestines likewise, is thin chyme and gas, and the mucous membrane is of a delicate clear gray color with somewhat marked rose-colored, but not swollen, Peyer's patches. The spleen is large and full of blood with very prominent little follicles. The liver is full of blood but otherwise quite normal as are also the kidneys. The mesenteric glands are somewhat enlarged, grayish red, and the chyle vessels are filled with white contents.

Diagnosis.—Death from suffocation on account of hyperplasia of the thymus gland.

Conclusions.—Both of the above-mentioned cases have in common that there was no real illness like an asthma or any similar disease, but that the nurslings had died absolutely healthy. *In both of them the autopsy had given as the cause of death the report usually reached in a case of death from suffocation, and in both only the enlarged thymus was anatomically found as an explanation for the suffocation.* The minute hæmorrhages which were present in large numbers in both thymus glands exist in cases of suffocation and correspond to punctiform hæmorrhages in the pericardium and in the pleura.

Since, however, in the first case the suspicion cannot be absolutely removed that the servant had

from the manubrium of the sternum to the vertebral column to be 2 centimetres; therefore this is the dangerous point at which an enlargement of the thymus of 1 or 1.5 centimetres in thickness must essentially narrow the space.

covered the child too much, and thus had aided in causing death, yet in the second case the child was awake when the difficulty in breathing occurred, the parents and several persons were present, and every unnatural influence was thoroughly excluded. So far the facts go.

If it is now asked, whether nothing definite is known about cases of death of this sort, it must be assumed that the judicial physicians in general attach no importance to hyperplasia of the thymus, since nothing is found about it, at least in the mortality statistics of the well-known text-books of Liman and von Hofmann. On the other hand, quite a lively debate is carried on concerning the importance of the thymus in the 40th or 50th years. In Alexander Friedleben's book, "The Physiology of the Thymus Gland in Health and Disease, etc., 1858," is found a very fertile research into the literature of old authors and in a supplement, page 248, is "a case of sudden death in the first act of laryngismus," with which both of my cases correspond in a striking manner. Nevertheless it is evidently this very work which is chiefly to blame for the later neglect of these cases, since Friedleben, after a long criticism, came to the conclusion that we have overestimated its importance even in such cases of sudden death. Evidently, then, the frequency of really enlarged thymus glands was overestimated and a special disease was established, called *asthma thymicum*, which should always have such a hyperplasia as a foundation. Now it naturally happened that cases of difficult breathing in children were infinitely more frequently observed than enlarged thymus glands were found at the autopsies, so that all sorts of diseases of the lungs and air passages were classified under the great head of *asthma thymicum*.

On the other hand cases came under observation in which, as in both of those mentioned above, no sort of symptoms of disease existed and in which, nevertheless, a thymus gland was found, which occasionally was still greater than those belonging to nurslings that had died of *asthma thymicum*. What was more natural than that Friedleben came to the conclusion that these relations of size were to be considered normal, since the glands had caused no difficulty previous to the first fatal attack, and that he finally denied not only the *asthma thymicum*, but also the possibility of a dangerous hyperplasia of the gland.

I am not exactly in the condition now, with only my two cases, to contradict the authority of Friedleben, which is given on an astonishing number of individual experiences, but I believe that I can draw two conclusions which render doubtful the value of his negative standpoint. In the first place, Friedleben deals just as radically with tumors of the thymus as with hyperplasia of the thymus. The opinion of the older authors concerning cancer of the thymus,

of which Astley Cooper had one case, Friedleben treats with unmistakable contempt, although to-day an experienced pathologist could hardly be in doubt that these tumors, observed in people perhaps 19 years old, which are situated in the anterior mediastinum which lie over the pericardium, which take possession of the site of the thymus, and in some measure look similar to it in structure, belong to the class of Virchow's lymphosarcoma thymicum. The reproach that the opinions of the older authors were somewhat lacking in exactness, can surely be acknowledged, but Friedleben's interpretations of these are all the more incorrect; because, although to-day those tumors are no longer called carcinomata, yet the occurrence of malignant lymphosarcoma is one of the best known facts that we know about the pathology of the thymus, and a denial of malignant tumors of the thymus must put in question the infallibility of Friedleben's criticism.

My second point is an observation which I find in the second volume of Virchow's "Tumors," 1866. In the chapter on hyperplasia of the lymph glands, Virchow speaks as follows, concerning *asthma thymicum*:

"This asthma has lately been much doubted, and it has been struck out from the class of disease. With Hasse⁴ I consider it possible, yet it is difficult to decide the question surely, since generally other symptoms of disease are present at the same time, which sufficiently declare the danger of the disease, viz.: spasmodic catarrh. Nevertheless, a considerable hyperplasia has its influence on the respiration and circulation; but there have been only a few cases in which I have really seen considerable hyperplasia. Yet I have seen them. In my collection I have one preparation where the child died of asthma and where the thymus was so markedly enlarged that I could not understand how the possibility could be denied that the dyspnoea arose from its pressure. The gland weighed 6.5 drachms. It was $3\frac{1}{2}$ inches long, $\frac{3}{8}$ inch thick, and $2\frac{1}{2}$ inches in its greatest breadth, with an average of $1\frac{1}{4}$ inch. In a recent case I notice that the thymus measured 6 cm. in its greatest breadth, 1.5 cm. in thickness and 7.5 cm. in its greatest length, with an average of 6.5 cm."

Thus it is seen that the measurements which Virchow has considered as sufficient for an explanation of death by suffocation, almost completely correspond with those of my second case; and furthermore, that these cases must be very rare when only two such preparations are found in the very abundant material in the Berlin Institute.

Just so little can I give satisfactory reasons why a condition which evidently is of long duration can

⁴ The book of K. Ew. Hasse: Spec. Pathol. Anatomie, published in 1841, relies concerning the thymus on Becker, Hangstedt, Kopf and others, and in hyperplasia of the thymus considers of importance only in special cases the compression on the trachea; but rather on the vena cava and the right auricle.

produce so sudden death. I can only be guided by my experience, that very often have I found a satisfactory explanation of the cause of sudden death at the autopsy of young children, but every explanation is at fault concerning the question that the child was so very well immediately before the occurrence of death and then so unexpectedly and so suddenly died.

At any rate, the judicial physician's side of the question appears to me important enough to mention it here. It is proven that healthy nurslings can die a sudden death by suffocation without attaching blame to any one, or without thinking of suffocation by the mother or others; and perhaps this communication affords the opportunity of supplying a deficiency in pathological anatomy by further observations in judicial autopsies.

SOCIETY PROCEEDINGS.

Chicago Medico-Legal Society.

Stated Meeting, October 6, 1888.

THE PRESIDENT, E. J. DOERING, M.D., IN THE CHAIR.

DR. E. WYLLYS ANDREWS and DR. JAMES BURRY read a paper on

MEDICO-LEGAL ASPECTS OF SOME INJURIES OF THE SPINAL CORD.

(See page 841.)

DR. HENRY L. LYMAN made some remarks on the same subject. (See page 844.)

DR. EDMUND ANDREWS: I have been so much perplexed by this class of cases that I would a good deal rather ask questions than attempt to enlighten anybody. I was induced to come here to-night, partly, because I am threatened to be called as a witness in a railroad suit. I have not examined the patient, but it is said to be an injury of the spine, and it struck me that this discussion would enlighten me.

DR. L. L. MCARTHUR: There are some facts that will bear reiteration and emphasis in this connection; and to begin the subject one might follow Ashurst, who says it is mortifying to confess that the physicians and surgeons of the present day know less in regard to concussions of the spine than their predecessors did. But he enlightens us a little further by stating that we know perhaps a little more what it is not. The improvements which have been made in the line of nervous diseases, and the advance in the pathology of the spinal cord, have enabled the neurologists to clear up many of the nervous diseases which were classed under the head of spinal concussion. Spinal concussion can be limited to

concussion of the brain, and yet, in concussion of the brain we always expect the symptoms to manifest themselves at or very soon after the injury. But in this class of cases which come under the head of spinal concussion—identically similar in their nature, that is, believed to be without any actual structural lesion of the spinal cord, they are claimed to occur weeks or months afterward. Hence, I feel inclined to ask the gentleman who closes the discussion if we have any symptoms which we may rely on as confirming, or being diagnostic of, spinal concussion? If they can in any way enlighten us as to our diagnosis for other troubles of the spinal cord, or if the neurologist has some means at arriving at a conclusion, some characteristic symptoms like vertigo, the peculiar gait of locomotor ataxia, where the gray matter of the cord is affected. There seems to be nothing definite conveyed by the term spinal concussion. Some other name has been suggested, rather than this term which covers up ignorance, and probably *comotio-cerebri* might be applied, rather than that of concussion. We know that concussion of the spine is not shock. Moreover, as advances are made in medicine the list of functional diseases are disappearing. Formerly, it was satisfactory to make a diagnosis of a person being paralyzed, but the term paralysis is obsolete, and so the functional diseases are, as advances are made, disappearing. We cannot expect to have changes take place of a physiological or pathological nature without some textural change; I mean if these changes persist, are constantly making themselves evident; they cannot last four weeks. Temporarily, we might have a functional derangement of the cord in which some symptoms were manifested, but as for weeks, months and years, as in the case of Dr. Phillips, it is unreasonable, in the light of our pathological literature, to expect without some structural changes. A significant fact in regard to concussion of the spine is that such a large proportion of the cases are in connection with some suit for damages, especially those which are obscure.

DR. J. G. KIERNAN: I did not hear the paper, and am not therefore very well prepared to discuss it. With regard to one point raised by Dr. McArthur I shall have to take issue; first, as to the textural question. It seems to me perfectly possible that for a long time there may be very marked symptoms without textural lesions. Cases have been under observation in which no lesion was found, and yet in which the symptoms were well marked. I was much pleased to hear Dr. Lyman refer to the fact that many cases could be considered rather as cerebral than spinal cases. The fact is lost sight of, that when the patient recovers from cerebral concussion he passes out of the surgeon's hands. When I was connected with the institution on Ward's Island,

I remember distinctly, four recoveries from cerebral concussion that died in two or three years, under my charge in the insane hospital; they did not recover from cerebral concussion. I think if cerebral concussion was as frequently made a matter of litigation, and as frequently examined as spinal concussion a great many more cases might be developed. A large number of the recoveries drift into the insane and poor hospitals and die there.

In regard to the point raised by Dr. Lyman, particularly with respect to the cases classified as mental disorder: The fact that many of these make good recoveries, is signally shown in a case of Page's that I have always been suspicious of. Page relates the case of a woman which he decided, after careful examination, was one entitled to pretty heavy damage; she was incurable, and yet she recovered, married, had children, and lived a happy life thereafter. But, unfortunately, very often those cases do not have such a fortunate outcome. Dr. McIlvaine, at a meeting of railway surgeons, reported a case in which a woman rallied from the effects of an accident, and he believed her to be a malingerer; but finally the woman began to evince all the symptoms of advanced myelitis, and the doctor was persuaded that her disease had started at the accident to which she traced it.

With regard to mental disturbances always being evidence of direct cerebral trouble, the question is certainly one which is open to doubt. We all know who have had experience with locomotor ataxia, that there are very marked mental disturbances which occur in consequence of that disorder; they occur in typical cases, and if they can occur from a spinal disorder of that kind, why not from the condition known as spinal concussion. That there is a great difficulty in diagnosis is shown by the elevated railroad case in Brooklyn. It was a case in which a man pushed a woman down stairs. The question as to whether the case was one of spinal concussion or of hysteria was debated, and evidence given on both sides by very eminent neurologists; I think on the side of the concussion were Drs. Hammond and Spitzka, and that eminent railway expert, James J. Johnson, who has written more on the subject of spinal concussion than any other person. On the other side were Landon Carter Gray and Stein. In that case the hysterical symptoms were well marked, and yet there was some spinal disorder, as the woman died with decided myelitic symptoms.

DR. C. E. WEBSTER: I think the point Dr. Lyman advanced is one of a great deal of interest; that is, that in these cases of spinal concussion there may be a fundamental change in the nervous system of the individual, so that after the concussion or accident takes place the fundamental trend or principle of his organization may

be changed; he may be a different individual.

DR. CLARK GAPIN: On the very threshold of the subject we find this difficulty, that it is in a more or less chaotic state, and any discussion of it at present must be desultory, a sort of patchwork discussion. A few years ago we thought we were pretty well grounded, and those of us who read Erichsen at that time without any very critical feeling, accepted what he had to say, and passed it by as a subject which a master mind had solved apparently for all time to come; but a more critical investigation of Erichsen's work shows that it is a master of expression rather than a masterly statement of fact. I think Erichsen's work may be criticised in the very name which he gives to the injury; he calls it concussion of the spine. Now if any one were to approach Erichsen with that very array of symptoms relating to the brain, he would never think of calling it concussion of the brain. Concussion of the brain we are accustomed to associate with positive physical and mental manifestations, and symptoms developed at the time or immediately following the injury. In his concussion of the spine there are no such symptoms, the symptoms may manifest themselves weeks, months or even years afterwards, and he is willing to accept them as evidence of this concussion. I think not only do the symptoms not bear out the name which he has applied, but there is a very different anatomical condition. The brain is penned up in a bony covering that is very close to the brain tissue; whereas the spinal cord floats loosely in a bony casing surrounded by a fluid, and at all points it is considerably distant from its bony surrounding, hence, the greater difficulty of any concussion occurring there.

With regard to the cases that have been presented, I think that those cases in which there is a positive physical injury to the spinal cord are very rarely passed by; there is very rarely any difficulty that I have noticed. In my observation there is no dispute among surgeons where the spinal cord is injured; we know the symptoms of even a blood clot on the spinal cord is very pronounced, and they are unquestionable; yet we are asked to believe that a great injury has been sustained by the cord where there are none of these, even transient symptoms. Some time ago I had a case in which it became my duty to investigate Erichsen's cases closely. I took all the cases and arranged them under three heads: the objective symptoms, the subjective symptoms, and those which could be maligned. If you ever go through that experience you will find how comparatively few the cases are which Erichsen gives as proof of concussion of the spine.

I agree with Dr. Lyman's statement of his arrangement and classification of these injuries,

that where these symptoms follow a considerable time afterward, or where they are of a functional nature, that is to say, where there are symptoms that are elusive in their character, which you cannot grasp, they are mental in their quality, and in some cases they may all result from the injury.

Sometimes I think, from the tremendous shock of a railroad accident, this disarrangement may occur, and the individual be a sufferer for his whole lifetime, but such cases are extremely rare and generally marked by present symptoms. The other class of cases are those which arise afterwards, and heredity has a great deal to do with these cases; we find some of them are individuals who have inherited imperfect nervous organizations; we find others who have, by dissipation, brought themselves into that condition, and when they come to sue a railroad company, no matter what their past life has been, what the heredity has been, it is the fault of the railroad company.

DR. E. W. ANDREWS: All authorities, including Erichsen, himself, positively assures us that spinal injuries received in railroad accidents are in no essential way different from those received in any other manner. Cases have been cited running back centuries in medical history of exactly this injury which Erichsen describes as railway spine. In this paper we have not attempted to discuss the pathology; this is well mapped out by pathologists of note. While it is true, as Dr. Lyman states, that these cases sooner or later cease to be surgical, yet the pathology of injuries is not essentially different; that we know from the pathology of disease. In at least one disease, locomotor ataxia, there seems to be very positive testimony that injury may be the exciting, even the predisposing cause. Leyden has asserted this. Pitt is strongly of the opinion that locomotor ataxia may be produced directly by injury, and more especially he insists that a case of locomotor ataxia may, as a result of railway injury, be produced. Of course if this be the case, if a disease of the spinal tract may be produced by injury, it would be supposed that other diseases might be produced by traumatism, but necessarily an understanding of the minute pathology of the cord, and especially the microscopic appearance of the tract, would be indispensable to one who would give testimony in a court of justice in cases involving important injuries. Within a short time, to my knowledge, one expert has been trapped in this manner in an important case. A prominent railway surgeon, an expert, went on the witness stand and, with what seems like temerity, acknowledged, in testifying in relation to a case of so called railway spine, that he was unacquainted with the work of Page. Well-meaning surgeons who are willing at the present day to go into a court of justice and give the pathological

views of Erichsen, I think are liable to be sadly caught up.

In place of such terms as spinal concussion it is perhaps better to use definite descriptive compounds; intra-spinal hemorrhage can undoubtedly be applied to a large number of spinal symptoms; laceration of the ligaments can also be used. Around the spinal cord there are a set of veins that can scarcely be lacerated without producing rupture, and hæmorrhages may occur upon the membranes or in the substance of the cord. Traumatic myelitis is undoubtedly a condition which at certain levels of the cord, can exist. Gower speaks of cases of traumatic myelitis in which a post-mortem has revealed all the conditions produced in operation from thickening of the membrane there. Some slight injury to the bones is another condition. And so we may classify the actual state of the cord, and in a very large number of cases specify accurately the lesion. As to pure concussion, it may be defined as a stunted condition of the cord, which is inferred to have undergone some form of molecular derangement by which its function is for the time being stunted. Cases are probably on record in which post-mortems, after spinal injury, have failed to reveal any lesion whatever in the tissue. I question, however, whether such cases have been subjected to complete and minute microscopical examination such as is at present considered essential. Lidell has related a case in which a post-mortem examination was held on a patient who had died, as was supposed, from concussion of the cord. At first no sign revealed itself in the appearance of the cord, and yet a more careful subsequent examination showed in the interior of the cord itself a globular clot which had produced compression and death. The question of Dr. McArthur, "Does Concussion Exist?" it is perhaps impossible to answer. My present impression is that transiently it may.

I will close by saying that Sir Joseph Bryant, as good surgical authority as we have to-day, has recently written and published a paper in which he claims that concussion of the brain has no existence as a pathological state. Hilton many years ago denied that any case of death from concussion of the brain had been examined which failed to reveal structural changes in the gross appearance. The tendency of the present time is to more and more careful examination of these traumatic troubles of the brain and cord. Much of the symptomatology of concussion is inferential, but from the investigations that are being carried on we will undoubtedly be able to define a structural condition corresponding to every symptom which injuries produce.

Philadelphia County Medical Society.

*Stated Meeting, October 10, 1888.*THE PRESIDENT, J. SOLIS-COHEN, M.D.,
IN THE CHAIR.

DR. G. E. DESCHWEINTZ presented the following paper on

ACUTE UNILATERAL OPTIC NEURITIS, WITH THE
REPORT OF A CASE.

Cases of sudden failure of sight in one eye with little or no ophthalmoscopic changes are occasionally encountered, in which the attack is attributed to exposure to cold. Sometimes in these instances congestion of the optic disk is present, and a retro-ocular neuritis has taken place. Other cases of acute optic neuritis, sometimes monocular, sometimes double, are on record. Thus Max Haadel¹ observed nine cases, some single and some double, with and without defects in the field of vision, usually with serious disturbance of sight, mostly with pronounced inflammation of the papilla and neighboring retina, in which exposure to a draught of air was the imputed cause. Periostitis at the foramen opticum was doubtful, and the absence of syphilis, sugar and albumen, lead and other poisons was assured in every case. In M. Schlüter's² statistics, among thirty-eight cases of neuritis and neuro-retinitis, seven are classed as primary, while the remainder are arranged as follows: thirteen of central origin, six from specific causes, four followed as the result of pathological orbital processes, two from abuse of alcohol and tobacco, two from albumen, and one each in connection with the puerperal state, after injury, from acute myelitis, and from hereditary reasons. E. Schmidt,³ in an examination of the cases of optic neuritis in the clinic of Prof. Hirschmann, at Charkow, found, among 120 cases in which the etiology was recorded with some degree of exactness, two instances of papillitis or papillo-retinitis due to cold. Voissius⁴ has recorded a case of monocular optic neuritis in a man aged 61, the attack coming on as the result of catching cold during a long wet drive. Recovery, with a hemiopic defect in the field of vision, was the outcome of the disorder. Roi⁵ reports some examples of optic neuritis which he looked upon as rheumatic. They appeared monocular, were accompanied by a speedy diminution of visual acuity passing into amaurosis, but not, however, to the exclusion of a return to normal sharpness of sight. H. F. Hansell⁶ describes two instances

of acute optic neuritis of rheumatic origin, one monocular in a healthy married woman, and the other double in a man aged 31. In each there was sudden loss of vision, swollen optic disks, and under treatment a rapid return to normal visual acuity. In Dr. Hansell's paper references to analogous cases are recorded, and L. W. Fox⁷ has recorded an instance of acute monocular optic neuritis. Recently R. H. Derby⁸ has reported a case of unioocular neuro-retinitis in a girl whose father had had syphilis, but who had no other manifestation of constitutional taint. There was at first a central scotoma, then optic neuritis. Light perception was lost, but under mercurial inunctions and iodide of potash the swelling of the disk, which had amounted to 7 D., subsided, and fair vision was recovered. Cases of optic neuritis without evident cause are occasionally recorded, as one by Power.⁹ The patient was an anæmic lad of 17; the neuritis was double; albumen and syphilis were absent; the lad had had two attacks of rheumatism and his father was gouty. Friedenwald¹⁰ describes an instance of right optic neuritis in an otherwise healthy girl of 14, preceded by violent headache and other symptoms indicating grave cerebral disturbance, but in which perfect recovery followed. He classed her case with these examples of optic neuritis, referred to by Juler, occasionally met with in young girls, the cause assigned being some menstrual disturbance, the presence of which, however, careful inquiry often fails to elicit. Usually the neuritis is preceded by severe headache and the prognosis is unfavorable. No further reference to the many cases of neuro-retinitis described in connection with irregularities of the menstrual functions need be made. Hirschberg¹¹ has seen several instances of primary optic neuritis, whose course is very typical. The disease is divided into three stages: the first, characterized by great visual disturbance, with slight ophthalmoscopic appearances; the second, by diminution of the visual disturbance and very marked inflammation of the disk; and the third, usually by almost complete recovery with pallor of the disk. The cases mostly occur in women, but are not connected with derangement of the sexual functions. Partaking somewhat of the nature of such cases, but not without a history of exposure as the exciting cause, is the subject of this communication.

Mrs. W., æt. 40, consulted me on July 11, 1888, because for a week past she had suffered from neuralgic pains in and above the eyes, most marked upon the right side. Bright light was distressing, and pain followed when the eyes were rolled upward; slight tenderness was ap-

¹ Max Haadel, Inaug. Diss., Berlin, 1885. Abst. Centralbl. f. Prakt. Augenheilk., p. 223, 1885.

² Schlüter, Inaug. Diss., Berlin, 1881. Abst. Nagel's Jahresbericht, xii Jahrgang, p. 305.

³ Schmidt, Westnik Ophth., 1885, p. 273. Archives of Ophthalmology, vol. xv, p. 249.

⁴ Voissius, Klin. Monatsbl. f. Augenheilk., xxi, p. 298.

⁵ Roi, De la névrite optique humatisme, Paris, 1886.

⁶ H. F. Hansell, Med. News, Aug. 7, 1886.

⁷ L. W. Fox, Amer. Journ. Ophthalmology, July, 1884.

⁸ Amer. Oph. Med. Soc., 1888. N. Y. Med. Journ., Oct. 6, 1888.

⁹ Power, Trans. Oph. Soc. U. King, vi, pp. 361-368, 1886.

¹⁰ A. Friedenwald, N. Y. Med. Journal, Feb. 5, 1887.

¹¹ Hirschberg, Centralbl. für Prakt. Augenheilk., Nov., 1887.

parent when pressure was made upon the right globe. The amplitude of accommodation was 3.5 D., and there was high insufficiency of the internal recti, so that a divergent squint was evident when the eyes attempted to fix a point 15 cm. distant. The fundus of each revealed no gross lesions, save a slight retinal haze around the upper and lower edges of the right disk, the deeper layers of which were gray. The maculas were normal, and the refraction appeared to be a simple hypermetropia of 1.5 D. In the absence of any general derangement the peri-orbital pain was attributed to eye-strain, and atropia drops were ordered for the purpose of measuring the refraction error. The correcting glass proved to be + 1.5 s. and with it normal vision was acquired. During the application of the atropia the neuralgia disappeared. The drops were discontinued and the patient directed to return in two weeks. During the measurement of the refractive error, the patient, on several occasions stated that although she saw the same number of letters with the right eye that she did with the left, she failed to see them with the same distinctness; but no changes at this time were present in the fundus. This indistinctness gradually assumed the appearance of a definite, dark area in the field of vision, the peri-orbital pain returned, and five days after the last ophthalmoscopic examination had failed to discover any changes in the disk or retina, she returned with the vision sunken to ability to count fingers and well-marked right-sided optic neuritis. All edges of the disk were woolly and its upper margins entirely hidden, while a flame-shaped hæmorrhage was situated above and to the inner side. The apex of the swelling was + 3. D., the vessels were about normal in size, and the macula free from disease. The pupil was of medium size and acted singularly to light and shade. A few days before this time she had gone on an excursion with her children, became much overheated, and had afterward waded about in a neighboring brook. It was in the evening of this day that the neuralgia returned, the definite dark area appeared in the field of vision, and shooting pains attacked the deep muscles of the thighs. Further examination proved an entire absence of any symptoms pointing to brain disorder; the heart and lungs were normal, and the patient was not anæmic, there had been no suppression of the menstrual flow and this function was natural, no active uterine disease existed, except a slight prolapsus which was not then under treatment. The urine was free from albumen, sugar, and tube casts, and the last recent illness, several years before, had been an attack of peritonitis from which a good recovery had resulted.

Dr. James Tyson, who saw the case in consultation, confirmed the accuracy of these examinations. Syphilitic infection and the action of lead

or other poisons were carefully excluded. The vision continued to sink, and on the following day was reduced to faint quantitative light-perception and the disk, if anything, was slightly more swollen. The temple was freely leeches and the patient directed to take fifteen grains salicylate of sodium before each meal, and seven and a-half grains of iodide of potash, with one-twenty-fourth of a grain of bichloride of mercury after each meal. Three days later, or on July 30th, the vision was slightly improved to the ability to see the hand move and the pain was distinctly better. The medicine was continued and small fly blisters ordered placed upon the temple. August 1st, the salicylate of sodium was discontinued, but the other medications continued, vision improved and large letters (Sn CC) were faintly recognized.

August 6th, marked improvement, $V. = \frac{5}{\text{xxxv}}$; edges of the disk visible all around and only a faint remnant of the hæmorrhage. August 20th, neuritis had practically subsided; $V. = \frac{5}{x}$, form and color fields normal in extent; no scotomata; ordered one-twenty-fourth of bichloride of mercury after each meal. September 9th, disk pallid, and all traces of the neuritis had disappeared.

In the absence of any symptoms pointing to cerebral disturbance, with no uterine disease save a slight prolapsus and the history of a leucorrhœa no longer active; with the menstrual functions normal; with a healthy circulatory apparatus and the urine free from albumen, sugar, and tube casts, and with the direct account of overheating and exposure, we may fairly conclude that this was an instance of genuine, acute optic neuritis. The history shows that before any ophthalmoscopic changes were evident, and before there was any positive diminution in visual acuity, the field of vision was invested with a haze which afterward assumed a definite, dark form, probably coincident with the first appearance of the inflammation around the papilla and the loss of sight. Hence it is evident that the attack was in process of formation and was precipitated by the wetting of the feet and sudden cooling after an overheating. Cases of optic neuritis apparently due to exposure, as has been pointed out by Leber and others, are mostly monocular; and rheumatism, perhaps upon insufficient evidence, has been cited as the cause. Gowers,¹² writing upon this point, says: "Neuro-retinitis has been loosely ascribed to rheumatism, but only on the ground that it has sometimes appeared to be due to cold." Rheumatic inflammation at the back of the orbit, however, according to the same author, may damage the optic nerve. Michel,¹³ commenting upon a reported case of acute, peripheral retro-bulbar neuritis, remarks that he has never observed a

¹² Medical Ophthalmoscopy, 2d ed. p. 230.

¹³ Nagel's Jahresbericht, xvii, Jahrgang, p. 351.

"rheumatic" neuritis and considers the assertion of such as a mark of ignorance of the causes especially operative in the production of inflammation of the optic nerve.

Hansell (loc. cit.) thinks "that a true rheumatic inflammation of the fibrous coat of the nerve between the optic foramen and the sclerotic" quite possible, but owing to the infrequent opportunity for section and examination admits that "our pathology is, at best, speculative." The central scotoma which existed in this and similar cases denotes an affection of the sheath of the nerve extending into its substance, not as Hirschberg remarks, as would have been supposed before the macular fibres were discovered, a central inflammation extending outward. The prognosis depends to a certain extent upon the site of the lesion and the termination may be favorable, as in the case reported, or a permanent atrophy of the disk may result. Hirschberg (loc. cit.), in his cases of primary optic neuritis, has found usually that the second eye is attacked; the interval may be days, or weeks, or months. Three of his cases illustrate this fact. A woman, aged 42, suddenly lost the sight of the right eye; in six days from the beginning of the attack this was well, but the left eye was attacked and optic neuritis developed; in three weeks recovery had taken place and the fundi were normal. In a second case a woman, aged 20, had slight temporary loss of vision in the right eye three weeks before coming under observation for loss of vision in the left, which came on eight days before. Four months later she came with the right eye similarly affected, while the left had practically recovered. A third instance was that of a peasant girl, aged 17, who had her right eye attacked in 1878, recovered, and in 1884 had her left eye attacked, which also recovered. The treatment has already been discussed. Leeching of the temple, followed by blisters, diaphoresis, together with the salicylates and iodide of potash, yield the best results. Improvement may take place before the remedies have time to take effect.

DR. RANDALL: I can add nothing to Dr. de Schweinitz's admirable presentation of the subject; but would like to reiterate the importance of early recognition and prompt treatment of such cases. I feel very sure that the issue depends very largely upon whether early alterative treatment is instituted, since upon the limitation and prompt removal of the exudation in the nerve and retina depends the possibility of a return to the normal with preservation of the sight.

DR. JAMES K. YOUNG exhibited the

MORTON OPHTHALMOSCOPE.

The Morton ophthalmoscope presents some new features which may be of interest to some of the members of this Society. It is made by Pickard & Curry, London, and as an instrument is well

balanced, fits the eye well, and as a piece of mechanism is perfection itself. It is a modification of the Gower's ophthalmoscope, as are all modern English instruments, but in the position and movement of the lenses differs from this and all others. The Rekoss disk is there replaced by an elliptical trough containing the lenses. These are simply confined in the channel, are unattached to each other, and are moved by a wheel below, and pass around a wheel above. In this respect it resembles the Couper instrument, in which the lenses are attached to one another as an endless chain, but is an improvement in the right direction. It has, in all, thirty-three lenses. In the trough are eighteen concave lenses from -0.5 to 30 D. Eleven convex lenses from $+0.5$ to 12 D., and on the disk has four additional lenses, a -10 D. and -50 D., and a $+0.5$ and $+20$ D. These admit of as many combinations as any instrument I am familiar with. It has three mirrors, a small concave mirror of about 6 cm. focal length, fastened to a collar, a large concave mirror of about 29 cm. focal length, and a plane one. These are all attached, and the apertures come readily over the sight hole. It has below the index dial a pupillometer, which adds to the usefulness of the instrument. It fits accurately into a rosewood case, and has a convex lens for indirect method.

DR. RANDALL: I feel that a discussion of minutiae as to the ophthalmoscope is hardly in place; but as to the point emphasized, that the instrument contains a concave lens of fifty dioptries, I must confess my scepticism as to its value. Cooper put a concave 72 D. in his instrument and told me that he was self-condemned as an ophthalmoscopist in having nothing stronger than 24 D.; yet when asked if he ever had use for the strong lens, admitted that a case calling for it was seen but once or twice a year. Even should one of the very rare cases of high myopia be met, the eye-ground would be better seen (if at all visible in the upright image) by placing a strong concave lens close in front of the examined eye.

DOMESTIC CORRESPONDENCE.

The Medical College of Virginia.

Dear Sir:—There has appeared in THE JOURNAL several articles reflecting upon the Medical College of Virginia, which are so flagrantly at variance with the truth, that the Faculty feel called upon to make the following statement of the facts, which the writer in THE JOURNAL has distorted in many ways. It is only in deference to the official position of THE JOURNAL as the accredited organ of the Medical Association that it is deemed necessary to notice these attacks, for the individual opinions of the author are simply a matter of indifference to the Faculty, being palpa-

bly the reflex of an inimical partizanship in this city.

Briefly put, the Medical College of Virginia is charged by its enemies:

1. With being hostile to the principles of the higher standard of medical education than at present obtained in the examinations of the colleges.

2. With being opposed to the establishment of a State Medical Board in pursuance of that object.

3. That it attempted, through its students, at the last session of the Legislature to amend the law, so far as to substitute for it the proposition to exempt Virginia students from its operations.

In denial of these assertions it is well known that the Medical College was one of the prime movers in getting the law passed by the Legislature, and, but for the zealous personal exertions of the members of the Faculty, that it would have failed to be enacted. After an experience of two years, it was found to be so very imperfect in many of its features that the Medical Society of Virginia and the Examining Board came before the Legislature asking that it be amended; the Board wishing to have the feature permitting an applicant to appear before any three members individually, instead of the entire Board, abolished; and the Society asking that the number of members of the Board be reduced from thirty to twelve, and that a diploma should be a preliminary qualification.

The students at the time the amendments were before the Legislature were incensed at the action of the Board at its last session when applicants from this College were rejected on account of what they believed was personal hostility of three of the members to the Faculty, and fearing that in future examinations the students of this College would be vicarious sufferers for such animosity, petitioned the Legislature to exempt the graduates of the two State institutions from the operation of the law.

A committee of the students waited upon the Dean and requested the co-operation of the Faculty in their movement, but were plainly and positively told that the College was committed to, and believed in the principles of the law, and therefore could not aid them in their attempt to abolish it or to get its students exempted from its operations. The Faculty, however, at the same time, claimed the same liberty of opinion in discussing the proposed amendments that were being offered, as other members of the profession, and did not concede that an objection to two or three members of the Board implied any hostility to the wish "to elevate the standard of medical education." To emphasize this fact, the Dean was instructed to appear before the Legislature and re-affirm the wish of the Faculty that the law, imperfect and unsatisfactory as it was, should remain in its original form rather than encounter

the risk of defeat in contentions over the amendments. Had it been the wish of the Faculty to oppose the passage of the bill, it will not be denied that there would have been any difficulty in defeating it, as a large number of legislators deferred to its wishes in the matter.

The writer in THE JOURNAL persists in placing the Medical College of Virginia in a false attitude in stating that the percentage of its graduates before the Examining Board was so small as to establish its meagre teaching qualifications in comparison with other institutions in the country, whilst the facts are, as the following report of the Examining Board will show, that it had the smallest number of graduates rejected of any other college whose number of applicants were equal to it.

RESULT OF WORK DONE BY MEDICAL EXAMINING BOARD OF VIRGINIA.

INSTITUTIONS REPRESENTED BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA.	Total No. of Applicants from each.	Rejections, Total from each.	Certificates issued by Med. Ex. Board of Va.	No. Rejections making Second Applications.	Second Rejections.	Certificate Issued on Second Application.	Incomplete Examinations by withdrawals, etc.
(From Jan. 1, 1885, through October 9, 1885.)							
Medical College of Virginia	57	8	48	3	..	3	1
University of Virginia, Med. Dep't.	33	1	32	..	..	..	..
College of Physicians and Surgeons, Baltimore, Md.	34	10	24	6	2	4	..
Univ. of Maryland, Med. Dep't, Baltimore, Md.	34	9	25	3	1	2	..
Jefferson Med. Col., Philadelphia, Pa.	12	3	9	3	..	2	..
Univ. of Penn'a, Philadelphia, Pa.	2	..	..	..	..	..	..
Bellevue Hosp. Med. Col., New York.	6	1	5	1	..	1	..
Univ. of City of New York, Med. Dep.	7	2	5	1	1	..	..
Col. of Physicians and Surgeons, N.Y.	3	..	3	..	..	..	..
Louisville Medical College, Ky.	2	1	..	..	..	..	..
Hosp. Med. College, Louisville, Ky.	3	..	3	..	..	..	..
Kentucky School of Med., Louisville	2	..	2	..	..	..	..
University of Louisville, Ky.	1	..	1	..	..	..	..
Med. Dep't of University of Tennessee, Nashville.	1	..	1	..	..	..	..
Vanderbilt Univ., Med. Dep't, Tenn.	3	1	2	1	..	1	..
Detroit Med. College, Mich.	2	1	1	1	..	1	..
Univ. of Michigan, Ann Arbor, Mich.	1	..	1	..	..	..	..
St. Louis Medical College, Mo.	1	..	1	..	..	..	..
Columbus Medical College, Ohio.	3	2	1	1	..	1	..
Cincinnati Medical College, Ohio.	1	1	..	..	..	..	..
Med. Dep't Howard University, Washington, D. C.	7	6	1	4	4	..	..
Leonard Med. Col., Raleigh, N. C.	3	1	2	..	..	..	..
Med. Dep't University of Georgetown, D. C.	1	..	1	..	..	..	..
Hahnemann Homoeopathic Medical College, Philadelphia.	2	..	2	..	..	..	..
Medico-Chir. Col., Philadelphia, Pa.	3	3	..	2	2	..	..
Geneva Medical College, New York.	1	..	1	..	..	..	..
Heidelberg, Germany	1	..	1	..	..	..	..
Baltimore Medical College, Md.	1	..	..	..	..	..	1
Colleges Unknown.	4	..	3	..	..	..	1
Non-Graduates.	11	4	5	..	..	..	2
Cleveland Homoeopathic Hosp. College, Ohio.	1	..	1	..	..	..	..
Total number of Examinations	249	54	181	25	10	15	5

Number of Applicants examined by Individual Examiners

out of Session. 117

Number of Applicants examined by Board in Session. 123

N.B.—The first and second columns add up 243 and 184 respectively; but three of the applicants each gave two Colleges of graduation.

It will be seen from the above table that 57 students of this College were examined by the Board, and about 7 per cent. were rejected, but that of the rejected three were reexamined five months after-

wards and were given their licenses. The statistics regarding the students from Baltimore, Philadelphia and New York show a rejection of 25 to 30 per cent.

At the examinations in April last the State Medical Examining Board gave certificates to practice medicine to three of the students of this College whom the Faculty the week previous had rejected for not reaching the standard required by it.

We shall pass by in silence the prophecies of the writer in *THE JOURNAL*, that the Faculty of the College intended going to Norfolk for the purpose of attacking the Medical Board and preventing its renomination, considering it necessary only to refer its readers to an accurate report of the meeting, where Dr. Cullen, the Dean of the Faculty, seconded the resolution of Dr. Chancellor for the reappointment of the entire Board, and embraced that opportunity of refuting the misrepresentations in regard to the action of the College, which was received by the Society with great gratification and satisfaction. Dr. Cullen, in substance, stated to the Society what is written here, and added that not only was the Medical College of Virginia in accord with the examining law of the State, but that it would go further than it does and join the Medical Society of Virginia in petitioning the Legislature to compel the two State institutions to have preliminary examinations and a three years' graded course. I am very respectfully yours,

J. S. DORSEY CULLEN,

Dean of the Faculty, Medical College of Virginia.

MISCELLANEOUS.

TYPHOID FEVER seems to have taken possession of Providence, R. I. From September 1 to December 5 more cases were reported than since the epidemic of 1882, which followed a very heavy rainfall, but the rainfall for the past three months breaks the weather record, and in this connection it is significant that typhoid is increasing very rapidly. From December 1 to December 5, 37 new cases were reported. It seems that the warning of Health Officer Chapin has not been heeded. In his last report he says: "The Board of Public Works reports that they have during the year succeeded in removing all the privies from the banks of the Pawtuxet River. There are, however, certain places where drainage may at times get into the river, or where it may be washed in during freshets. The bleacheries, dye works and wool scouring works still discharge their effluent into the river. It also happens that occasionally dead animals, slops, night-soil and other offensive matters are thrown in. Much of this pollution can be prevented by a continued inspection of the banks of the stream, and I am glad to be able to report that the Board of Public Works have detailed a man for this purpose. Still, it cannot be hoped that every source of pollution can be permanently removed from a river flowing in such a thickly settled region, and through so many manufacturing villages as does the Pawtuxet. The danger of pollution, either accidental or intentional, will always be considerable, and we must remember that in epidemics of typhoid fever in other cities and towns, a single case of the disease, on the banks of the stream

which serves as the water supply, and that, too, far above the intake, has been clearly proved to be the cause of the outbreak. Such being the case, we cannot afford to run any risks, and if the improved methods of precipitation and filtration which have been recently brought into use are what is claimed for them, it would be highly advantageous if they could be adopted here. As in addition to removing disease germs, such methods render the water clear and free from sediment, their adoption would be most acceptable to our people. The subject is one that should receive careful and immediate investigation. While it may be possible to filter the water on a large scale before it enters the mains, the use of domestic filters on the house taps is not only useless, but dangerous, and has been discouraged by this Department on all occasions." Dr. Chapin said that the importance of thoroughly boiling Pawtuxet water before taking it into the system could not be too strongly emphasized. While boiling may not improve the taste of the water, it will generally kill the germs of disease it contains.

EXPOSURE OF A QUACK.—Aaron Geismar, alias Dr. Geismardo, alias Professor Albert Le Grand, alias Professor Ernest De Blanc, who is known in Chicago, has come to grief in New York at the hands of Miss Nellie Bly, a newspaper writer. He had announced in a flaming advertisement as follows:

PROF. ERNEST DE BLANC,
the Famous Chevalier Electrician of Paris,
will exhibit HIS SKILL AND TREAT THE AFFLICTED FREE on the stage
IN VIEW OF THE AUDIENCE.

Nellie Bly visited his house and discovered that his electric apparatus consisted of a battery in a back hall of his house, and a nickel-plated spring at the door by which he turned the electricity off and on. By means of wires (concealed by a rug) in the floor, he would apparently act as a living battery upon his patients. This discovery led to the disclosure of his life of fraud. He started out in Portland, Ore., several years ago, as Dr. Geismardo. While there he assaulted one of his women patients and was imprisoned. Next he appeared in San Jose, Cal., where he made a sudden departure with money advanced for treatments which he never gave. He turned up at Toledo soon after and announced his lectures and treatment, but did not put in an appearance at the hall. In July last he was billed in Buffalo as Professor Albert Le Grand. On that occasion the *Chicago Herald's* Buffalo correspondent telegraphed the following:

Dr. Edward Storck, chairman of the Erie County Medical Censors, to-day gave "Professor" Albert Le Grand notice to leave town or be arrested for practicing without a diploma. Le Grand gave free lectures in Music Hall, and claimed to cure the lame, halt and blind in Biblical fashion. Dr. Storck said: "Professor Le Grand has decided to leave the city within twenty-four hours. He admitted to me that he had no diploma, and that he was no physician, but a healer. When I asked him if he did not take fees he said that he did. Then, after a good deal of bluster, he gave in. I have learned some of his history. He was a Dr. Geismardo in Portland, Ore., and claimed to be a member of the Society of Sciences of Paris. He also exhibited a decoration, which he claimed to be a cross of the Legion of Honor. He left that city under a cloud. He then turned up in Denver, St. Louis, Kansas City, Baltimore and Boston. He was also arrested in Milwaukee. The society could prosecute him here if it wished to, but if he leaves the city that will be enough. Le Grand speaks French fluently, and owned up to me that his magnetic touch was caused by an electric belt concealed in the palm of his hand. He had three or four dummies traveling with him who came upon the platform and were cured by him.

In July the "doctor" made his appearance in New Orleans. He spent considerable money in advertising, hotel expenses, and theatre rent, but had to leave the city

before getting any returns on account of previous swindlings in that city. Finally he went to New York, and there his whole record has been made public.

HEALTH IN MICHIGAN.—For the month of November, 1888, compared with the preceding month, the reports indicate that tonsillitis increased, and that typho-malarial fever, diarrhoea, dysentery, cholera morbus, and cholera infantum decreased in prevalence.

Compared with the preceding month the temperature for the month of November, 1888, was lower, the relative humidity was more, the absolute humidity and the day and night ozone were less.

Compared with the average of the month of November, in the nine years, 1879-87, diphtheria, intermittent fever, consumption of the lungs, typhoid fever, pneumonia typho-malarial fever, whooping-cough, and remittent fever were less prevalent in November, 1888.

For the month of November, 1888, compared with the average for corresponding months in the nine years, 1879-1887, the temperature was slightly higher, the absolute humidity was slightly more, the relative humidity about the same, and the day and the night ozone were much less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of November, 1888, at twenty-six places, scarlet fever at forty-one places, typhoid fever at twenty-three places, measles at six places and small-pox at seven places.

Reports from all sources show diphtheria at ten places less, scarlet fever at nine places more, typhoid fever at twenty places less, measles at one place less, and small-pox in seven places more in the month of November, 1888, than in the preceding month.

YELLOW FEVER IN CUBA.—A Washington physician who is well informed upon West Indian affairs, says an Eastern paper, makes the surprising statement that the native Cubans do not desire to stamp out yellow fever. They suffer but little from it themselves, and are glad to have it kill about 1,000 Spanish soldiers every year. If this is true it is a shocking example of the possible results of race and national prejudice. Cuba is the fever's winter home, and from there every summer it begins a raid upon our Southern cities. It may yet become necessary to annex the island to the United States in order to have it put under proper sanitary condition. As this does not appear to be practicable at present, the best course now open is to take precautions for keeping the infection out of our country next year. Early in the season a rigid quarantine should be established, and the authorities of all Southern cities liable to visitation should see to it that all filth is removed from the streets before it can harbor and propagate the dreaded disease.

THE PENNSYLVANIA STATE INSANE HOSPITAL.—The Trustees of the State Hospital for the Insane at Norristown held their regular monthly meeting on Dec. 8. Dr. Chase reported 848 patients in the male department at the end of November, and Dr. Alice Bennett reported 827 patients in the female department. The physicians report the general health of the patients exceptionally good. Dr. Chase recommended that photographs be taken of the patients in order to keep the likenesses with the record in order to distinguish those of the same name, and to be used in case a patient escapes, and the recommendation was voted down. Trustee Stinson remarked, "we want no rogues' gallery here." The report of the Trustees concludes as follows: The Hospital has now a population of 1660 patients and if the natural increase of the insane population of the district is to be provided for it will be necessary to put up an additional ward and supply buildings. The Trustees believe that they can put up these buildings to accommodate 660 patients, 330 of each sex, for about \$400 per bed. They therefore recommend to the Legislature to appropriate \$250,000 for that purpose.

DR. A. F. RITCHIE has resigned the Chair of Anatomy in the Medical Department of the University of Minnesota.

INFLUENZA is reported to be epidemic at Fort Dodge, Iowa, and in its vicinity.

HEAD-CHEESE POISONING is reported at Brush Creek, Iowa, there being about 30 cases, none serious.

A **CODE OF VACCINATION RULES** has been adopted by the Board of Health of Columbus, Ohio, in regard to the pupils and teachers in public schools. A system of house inspection has been adopted, and is being carried into effect.

DR. R. S. SABIN, aged 56, of West Troy, a graduate of the Albany Medical College, died on Dec. 4.

A **NEW HOSPITAL** has been erected at South Bay City, Michigan.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from November 30, 1888, to December 7, 1888.

Major John W. Williams, Surgeon U. S. Army, is hereby relieved from further duty with the battalion of the Second Artillery at Ft. Wadsworth, New York Harbor, and will proceed to join his permanent station, Jackson Bks., La. Par. 3, S. O. 256, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, December 5, 1888.

First Lieut. Robert R. Ball, Asst. Surgeon, leave of absence granted in S. O. 129, Dept. of the Missouri, October 18, 1888, is extended one month. Par. 11, S. O. 279, A. G. O., Washington, November 30, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 8, 1888.

Surgeon J. F. Bransford, detached from Smithsonian Institution and granted six months' leave, with permission to go abroad.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service; for the Two Weeks Ending December 8, 1888.

Surgeon G. W. Stoner, when relieved, to proceed to Detroit, Mich., and assume charge of the Service. November 26, 1888. Granted leave of absence for thirty days. November 28, 1888.

P. A. Surgeon D. A. Carmichael, granted leave of absence for thirty days. November 27, 1888. Relieved from duty at Washington, D. C.; ordered to Marine Hospital, Wilmington, N. C. December 3, 1888.

P. A. Surgeon S. C. Devan, detailed as attending Surgeon and acting Chief Clerk Marine Hospital Bureau. December 3, 1888. Granted leave of absence for eight days. December 8, 1888.

P. A. Surgeon F. M. Urquhart, to proceed to Evansville, Ind., for temporary duty. November 30, 1888.

P. A. Surgeon S. D. Brooks, granted leave of absence for thirty days. December 8, 1888.

Asst. Surgeon Seaton Norman, ordered to examination for promotion. November 27, 1888. Granted leave of absence for twenty-five days. December 8, 1888.

Asst. Surgeon J. B. Fattie, ordered to examination for promotion. December 7, 1888.

Asst. Surgeon G. M. Magruder, relieved from special duty at Way Cross, Ga. December 8, 1888.

Asst. Surgeon J. J. Kinyoun, granted leave of absence for ten days. December 8, 1888.

Asst. Surgeon G. T. Vaughan, granted leave of absence for twenty-three days. December 8, 1888.

Asst. Surgeon G. M. Guitéras, to proceed to Savannah, Ga., for temporary duty. December 3, 1888.

T H E

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, DECEMBER 22, 1888.

No. 25.

ADDRESS IN SYPHILOGRAPHY.

SYPHILIS AS A NON-VENEREAL DISEASE.

Address of the Chairman at the first session of the Section on Dermatology and Syphilography, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May 8, 1888.

BY L. DUNCAN BULKLEY, A.M., M.D.,
OF NEW YORK.

Gentlemen:—It gives me special pleasure to address you on this occasion, marking as it does an epoch in the history of the American Medical Association, which consequently should be regarded as an event of importance in American Medicine. We gather here to-day at the first meeting of the Section on Dermatology and Syphilography, of the American Medical Association, and in a measure to celebrate the recognition of this branch of medicine as a special department by the great representative medical organization of America. It is, therefore, an occasion in which those interested in this department of study and practice should feel a peculiar interest, and should particularly rejoice, for it certainly indicates an advance in medical thought and liberality, a broadening of the field of work of our Association, and, it is to be hoped, a benefit to the profession and community.

I will not occupy your time by tracing the rise of American dermatology, or detailing the elements which have contributed to bring it to its present position, as these topics have been freely handled by abler pens than mine in the Addresses of the Presidents of the American Dermatological Association, nor shall I attempt to present a sketch of the recent progress in this department, as is frequently done in such addresses, for the present current literature and the rapid multiplication of text-books renders these *résumés* less necessary and of less practical value. But I shall shortly direct your attention to a subject which I trust will prove as interesting to you as it has been to me, and which, I hope, may be the means of ultimately effecting some good. The present Section is organized for work, for the practical consideration of topics related to diseases of the skin, and it is hoped that it will contribute greatly to making dermatology a more interesting and

successful field of labor, not only to those particularly engaged in this line of practice, but also to the general practitioner, to whom this branch often presents unusual difficulties.

The title which has been given to this Section is that of Dermatology and Syphilography, in order, no doubt, to directly interest the largest number of persons possible, who might not otherwise consider that syphilis belonged properly to this Section. While there is no practical objection to the name as it now stands, it is in a measure tautological, for syphilis should in reality be no more specially mentioned than any other one of the great diseases which affect the skin, although it is undoubtedly the most important of all, and ranks hardly second to any other disease affecting the human race, both in its clinical and pathological importance. But syphilis belongs naturally to this group of diseases for reasons which are easily seen. Thus:

1. In a very large share of instances the disease gains admission through the skin, or contiguous mucous membrane, and the primary lesion then resulting becomes a sore or ulcer which is diagnosed from other cutaneous ulcerations which may resemble it.

2. Syphilis almost invariably exhibits an eruption on the skin at some period during its existence, and the manifestations of syphilis on the skin are among its most constant symptoms, far more certainly than can be asserted of any other organ or tissue of the body.

3. Syphilis is almost always diagnosticated by means of its cutaneous lesions, indeed it is generally questioned very seriously if the patient has had syphilis if there are no lesions of the skin, past or present, from which to form a diagnosis.

Syphilis has heretofore been regarded principally as a venereal disease, and is found treated of specially in works relating to this subject. But in the light of our present knowledge of the disease and the frequency with which it is communicated innocently, both by contagion and inheritance, we are no longer justified in regarding it solely as an accompaniment of vice, or the scourge of those who have committed sexual errors. In the further development of the subject I will briefly present some of the recorded facts in regard to

SYPHILIS AS A NON-VENEREAL DISEASE.¹

In using the expression "non-venereal disease" in this connection I refer, as may be imagined, to the communication of syphilis by other means than illicit sexual intercourse, for marital syphilis, as will be seen, furnishes annually a very considerable number of cases of syphilis innocently acquired.

The subject of hereditary syphilis, or the transmission of the disease to the offspring by either or both parents is a very large field of study and need not be entered upon here, as the non-venereal origin of syphilis in the vast army of these innocent victims in years past cannot be called into question; as a single instance may be mentioned, the records of the Moscow Hospital, where in eleven years there were 2,002 children born with syphilis, of whom 1,425, or 70 per cent., died.²

Fournier³ has recently furnished some interesting data in regard to the proportion of cases of innocent syphilis occurring among women, which may be briefly alluded to. The statistics were taken from 887 cases of syphilis in females in his private practice, where notes of the cases were kept; among these it was found that the disease was communicated in a non-sexual manner in 45 cases, or 5.07 of the entire number, as follows:

In domestic contagion from nurslings, children, wet nurses or nursery maids with syphilis (all the cases occurring in married women or young children)	12
Syphilis transmitted to nurses by children hereditarily syphilitic	8
Cases of hereditary syphilis	7
Cases of midwives infected on the finger in the exercise of their profession	5
Cases of syphilis acquired accidentally in infancy	4
Syphilis communicated by vaccination	2
Cases of syphilis communicated by Eustachian catheterization	2
Case of syphilis communicated by rape	1
Unknown, but non-venereal origin	4

Total cases of non-sexual syphilis, 45

Among the remaining 842 cases there were 220 women known to be married, from whose histories conclusions were drawn, doubtful cases being excluded. Of these 220, 56 were further excluded, as having either contracted syphilis from a lover, or for other reasons, leaving 164, or 20 per cent. of all the women who were infected honestly and innocently in their marriage relations through no fault of their own. Adding this to the 5 per cent. already considered, Fournier concludes that in about 25 per cent. of all cases in females, syphilis is acquired innocently and undeservedly.

The proportion of cases of syphilis in males where the disease is thus acquired is undoubtedly smaller than in females, but it is probably much

greater than one would imagine who had not considered the subject. Several years ago I presented data in regard to the cases of extra-genital chancres which had passed under my observation, before the New York State Medical Society, and the number of cases then reported, namely, 27, has since been swelled to 58. Now, of these 58 cases, no less than 30 were in males, to 28 in females. If the records of extra-genital chancres in males occurring in literature are carefully studied it will be found that the number is really very large where the disease has been acquired in a perfectly innocent manner. As a single illustration of the infection of males in this manner, it may be mentioned that in several of the epidemics of syphilis from vaccination, lactation, breast drawing, and the like, it has been repeatedly recorded that several of the women who became infected communicated the disease innocently to their husbands, by means of a chancre of the penis.

The modes and methods by means of which syphilis has been communicated innocently are almost beyond the comprehension of one who has not given thought or research to the subject, and the instances are multiplying in recent literature in a most remarkable manner; showing that, so far from there being less danger than in more ignorant times, the actual instances are increasing as the advance of civilization furnishes new opportunities of immediate or mediate contact and inoculation.

Time will not suffice to enter at all fully into the subject before us, much less to give details of many illustrative cases, but I will endeavor to indicate the lines or directions in which, from past experience, infection may be most commonly expected. Three main groups or varieties of cases of non-venereal infection of syphilis may very readily be made out, according as the inoculation takes place:

1. Among those having common relations, and through the bonds of common interest in domestic and industrial life; to this class the term *syphilis economica* has been given.
2. Among infants and those having to do with their care and nourishment, or *syphilis brephotropica*, and;
3. In connection with the various forms of body-service, medical, and surgical, or of like nature—*syphilis technica*. In each of these groups we will find a large number of subdivisions, amounting to over one hundred, representing different modes of communicating the disease which have thus far been found recorded in literature. These divisions may now be considered a little more in detail.

1. *Syphilis Economica*.—Here we have the instances of the spread of syphilis in the family by the common and necessary relations of life, and in the extension of the family relation to the various groups of industrial pursuits; and further,

¹ The limits of this Address permit of but a short synopsis of the matter which has been prepared on this subject, and only the briefest outline of the data can be given.
² Quoted by Sturgis. Appendix to Diday on Infantile Syphilis. New York, 1883, p. 265.
³ Fournier. Annales de Dermat. et de Syph. Tome viii, No. 12, 1878. New series, p. 757.

the communication of syphilis from one individual to another in the different conditions of individual life. Time forbids more than a mention of the ultimate data belonging to these main groups, most of which have been corroborated by a number of instances reported by different observers. Under implements and vessels we find spoons, knives, forks, cups, glasses and jugs. Tobacco pipes have been the very frequent means of transmitting the disease, and it has also been conveyed by means of cigars, both when passed from one smoker to another, and also when fresh from the manufacturer. Torches passed from mouth to mouth have also been the means of conveying syphilis. Wearing apparel, such as shirts, drawers, pantaloons, bathing-suits, also handkerchiefs, gloves and masks, have all served to convey syphilis; as also lint, plaster; likewise bedding and toilet articles, such as sheets, pillows, towels and sponges, together with combs, syringes and tooth brushes. It is a little remarkable that privy seats and public urinals, which are popularly supposed to be a fruitful source of infection, are found very rarely referred to in a serious manner, and really not a single well authenticated case has been met with recorded in literature, even after a most diligent search during the past three years; a rather striking illustration of the fallacy of popular impressions or beliefs. As more curious methods of conveying the syphilitic poison may be mentioned an opera glass, and a cane.

The next group, relating to industrial transmission of syphilis, includes some most interesting data. Here we find quite a large class of cases, made up of a number of trades or occupations, where the poison is conveyed through the mouth, by the use of necessary implements of the calling. Thus, the well known glass-blowers' syphilis has in times past been conveyed to a very considerable number of persons through the common use of the pipe employed; a total number of at least 162 cases have been found reported, there being repeatedly small epidemics of syphilis from this cause. At one time, when from twelve to fifteen men were thus infected in one factory, there were also five or six of their wives who received the disease again innocently from them, besides many children. Cases are reported where assayers and goldsmiths have been infected from blowpipes used in common, also an instance where the whole family of a weaver received syphilis from a pipe used to sprinkle the cloth, it being passed from mouth to mouth. Musicians have acquired the disease through the mouth-piece of their instruments, and a car-conductor by means of a whistle borrowed from a syphilitic friend. A curious method of the transmission of syphilis is found in an instance where three furriers acquired chancre in the lip by means of the thread which was drawn through the lips and bitten off; the thread abraded the lips and at the same time conveyed

the poison. A case is reported where a maker of artificial flowers was infected through her handiwork, and an instance where tack-nails passed from the mouth of one upholsterer with mucous patches to another conveyed the poison to abrasions caused by the nails.

A number of cases are on record where pens, pencils and paper-cutters put in the mouth have carried the poison of syphilis, and one where a piece of lip-glue used after a syphilitic was the means of transferring the poison. A single case, not over-carefully recorded, has been found where syphilitic inoculation was chargeable to a coin put in the mouth, but no instances have been discovered where paper-money conveyed the poison; this is not a little remarkable in view of the frequent habit of wetting the fingers on the lips in handling paper-money.

Laundresses have been reported as acquiring syphilis through their occupation, but the instances are very rare and sometimes dubious. Bundles of cast-off clothing and rags have also been infected thereby, and in one instance it is alleged that the *acarus scabiei* conveyed the poison. This latter, however, seems extremely improbable, as it is far more likely that the virus was transferred by scratching to the interdigital space where the chauce appeared.

We come next to the group of cases pertaining to individuals in various conditions in life, which relates to the personal transference of the poison by kissing, biting, scratching, pinching, and contact of parts. Kissing affords a most prolific source for the propagation of syphilis, and probably comes next to the venereal act in point of frequency of cases thus acquired. The number of instances of this on record is very large. Biting has also furnished a large number of cases, and a case is on record where the disease was communicated intentionally by a bite, the giver being actuated by personal spite and hatred. Scratching and pinching, and also individual contact in carrying one person by another, have all furnished cases of non-venereal syphilis.

2. *Syphilis Bephotrophica*.—The nutrition of and attendance upon infants has always been a very fruitful source of the non-venereal transmission of syphilis, and literature is full of accounts where not only single cases or groups of individuals have been thus infected, but even where syphilis has by this means become almost epidemic, many being attacked before the real nature of the disease was recognized and its progress arrested. Wet-nurses acquire the disease from infants, who may either be hereditarily syphilitic or who have acquired the disease in some of the many manners to be mentioned later. Infants receive syphilis from wet-nurses, generally through chancres or mucous patches on the breasts, the nurse having acquired the disease either in married life, or from a syphilitic child, or in other manner.

A number of epidemics are on record where from sixteen to twenty-three persons have thus acquired the disease, started by a single syphilitic child, and in the celebrated "Pian de Nerac," occurring in a town in the southeast of France, more than forty women and children were infected, besides a number of husbands and others who concealed their disease.

Hand feeding has frequently been the means of communicating syphilis through the agency of feeding bottles, sugar-teats, cups, spoons, etc., of which many reports are found in literature which need not be here detailed. A single illustration may be given of a case observed by Hutchinson: A woman bore a number of syphilitic children as a result of the disease occurring before marriage. Her husband escaped infection until he acquired a chancre of the tonsil from his habit of starting the feeding-bottle with his mouth, in the night, for his fourth child, who was at that time suffering from a syphilitic mouth. Multitudes of instances are on record where the child has acquired syphilis through feeding implements.

The various offices and relations connected with attendance upon children are also often the means of propagating the disease between them and attendants. Cases are on record where wash water, sponges, syringes, combs, napkins, clothing and other articles have served as the means of conveying the contagion in one or the other direction. The various modes of contact between infants and adults in caring for them have also afforded opportunities for the transmission of syphilis. Thus a case is reported by Waller, where an old woman aged 70 years contracted a chancre on the left cheek and one on the left neck, at points where she was accustomed to hold a syphilitic infant in quieting it to sleep, and a number of instances are on record where a chancre has occurred on the forearm from contact with a diseased infant in carrying. Scratches and tooth wounds inflicted by syphilitic infants have repeatedly given rise to chancres, while a large number of cases are to be found where infants have received an extra genital chancre from the kissing and fondling of syphilitic adults.

3. *Syphilis Technica*.—The third main class of cases of the non-veneral transmission of syphilis relates to the acquiring the disease in connection with the various forms of body service, medical and surgical, or in others of like nature, as by nurses and attendants. Here we find three very clearly distinguishable groups of instances: 1. Where the operator is the victim; 2, where the operator is the syphilifee; and 3, where the operator is the medium.

Syphilis has been acquired by physicians and others in the pursuit of their profession in almost numberless instances, and often in a most unexpected manner. Surgeons have received the poison through wounds during operations, and an-

atomists during dissections. It is also sometimes acquired in manipulative procedures in spite of the utmost precaution. Jullien⁴ relates a case where an eminent specialist had a slight bleeding lesion on the finger and was called upon to examine a chancre upon the upper surface of the glans penis. He held the wounded finger carefully aloof from the sore, but during the examination he found that there was a second chancre of the scrotum which had just come in contact with the abrasion which he had striven to protect. Recognizing the danger, he at once washed carefully and cleansed the part thoroughly, but all in vain, as a chancre formed on the wounded part and the syphilis ran its course.

Accoucheurs and midwives furnish by far the largest number of cases of infection of this class, and literature is full of accounts of the same; personally I have seen five or six cases of digital chancre in physicians which had this origin, one of whom infected his wife. Dentists also occasionally acquire chancre of the finger from infection from mucous patches in the mouths of those on whom they are operating.

Chancres have also been produced upon the eyelids, nostrils, and lips of physicians and attendants by conveying the virus on the fingers to the parts infected, and instances are on record where the patient, while coughing, has projected the poison in the physician's face and a chancre of the eyelid or elsewhere has resulted. On one occasion a physician acquired a chancre of the tonsil from practicing artificial respiration with the mouth on a syphilitic child. Many instances may be found where individuals have become infected in the practice of breast drawing with the mouth, and also by sucking recent wounds.

The next class of cases in this group refers to those in which the operator serves as the syphilifer, and communicates his own disease to others; of this variety there are large numbers of instances on record. We have already noticed that accoucheurs and midwives often contract syphilis in their calling, and numerous instances are on record where they have been the means of spreading the disease to others, and even in large numbers. The celebrated epidemic at St. Euphennie, in France, was of this nature. A midwife acquired a chancre of the right index finger, followed by a full attack of constitutional syphilis. She still practiced her calling for four months, and communicated syphilis to more than fifty women, and through them at least thirty others were infected. In another epidemic in France over 100 were infected with syphilis, and very recently Klein⁵ reported an epidemic in England where thirty married women, nine husbands, and two

⁴ Jullien. *Traité pratique des Mal. Vénér.* 2d edit., Paris, 1886, p. 537.
⁵ Klein. *Brit. Med. Journal*, January 20, 1883.

infants contracted syphilis, directly or indirectly, from a diseased midwife.

Another very fruitful source for the propagation of non-veneral syphilis has been found in the operation of breast-drawing by the mouth, which has been mentioned as sometimes giving rise to syphilis in the operator. This practice is less common in this country and among the more highly civilized people than among the peasantry of European countries, where it has sometimes given rise to epidemics of syphilis of considerable size. As early as 1654 an event of this nature was recorded, where a professional breast-drawer infected many nursing women with chancre of the breast, and these in turn infected their nurslings, who communicated the disease to many others. An epidemic of this kind is reported by Leloir⁶ as occurring as late as 1880, where a woman acquired a chancre of the lip, and she infected four women, who in turn gave the disease to three nursing infants, one of whom, as also one of the women, died of the disease; one of the infants infected its father through the nursing-bottle and another infant gave the disease to its wet-nurse, who again transmitted it to her own infant. Many more most interesting illustrations could be given but for want of space.

A rather curious mode of propagating syphilis innocently is found in the practice of removing particles from the eye by means of the tip of the tongue. In two small villages in Russia, Tep-ljaschin⁷ found, among a population of 532 persons, no less than 68 individuals, 23 males and 45 females, affected with syphilis, about one-quarter of them being under 10 years of age. One-half of the entire number had been infected directly by a female quack who had followed the industry of removing foreign bodies from the eye, and treating trachoma, with her tongue. The woman became infected in her calling, and pursued it while diseased, with the results mentioned. A number of single instances of the same method of infection have been recorded, two of which occurred in this country.⁸

Wound sucking, which has been mentioned as giving syphilis to the operator, has also been the occasion of communicating the disease to the person operated upon.

Tattooing has been reported as the means of conveying syphilis by a number of observers, and a total of no less than 67 recorded cases has been found; as is well known, the poison is conveyed from mucous patches on the operator's lips, by means of saliva used to moisten the needles or the pigment during the operation.

The last group of these cases of the non-veneral communication of syphilis relates *the operator acting as a medium*, conveying the poison from

one individual to another. In illustration of this, a large amount of material could be presented, but space permits of but brief mention of the principal facts.

Vaccination, as is well known, has on repeated occasions given opportunity for the transmission of syphilis, and need not be dwelt upon here. Hundreds of cases of this description are found in literature, and as an example may be mentioned the well-known epidemic at Rivalle, Italy, where 80 cases were reported, of whom 7 died.

Ritual circumcision has also occasionally been the means of syphilitic inoculation, the first reported cases occurring in 1805, since which time a considerable number of observers have reported instances of the same, and on one occasion—referred to by Jaffe⁹—thirty boys were infected by one operator in Vienna.

Transplantation of teeth—an old practice recently somewhat revived—has been the means of conveying syphilis, and skin-grafting has been followed with like result.

The operation of wet-cupping has repeatedly given rise to syphilitic contagion, the oldest account of this being in the case of the celebrated "Maladie de Brunn," in Moravia, in 1578. In this village no less than 80 persons were infected in three months by this means, in addition to about a hundred in the surrounding country. In Finland repeated epidemics have occurred from this cause, in one instance nearly two hundred persons being infected.

Cases have been reported where minor surgical operations, as opening abscesses, scarifying a hydrocele, the use of serres-fines after circumcision, etc., have given rise to chancres with syphilitic inoculation in the site of the wound, and injuries made by dental instruments have in like manner produced syphilitic infection. Razor wounds are also sometimes the site of syphilitic inoculation, possibly produced during shaving, possibly afterwards from other sources.

Eustachian catheterization has on repeated occasions been the means of conveying the syphilitic poison, no less than twenty-five persons reporting cases where this had occurred; of these cases about sixty were traced to the practice of a certain ear specialist in Paris, and some cases of the same nature have also been reported as occurring in this country. Surgical sounds and speculæ are also accredited with having produced like results.

From this very hasty and by no means complete sketch of the recorded methods and instances of the communication of syphilis in the various walks and occupations of life, it is readily seen that the disease may and does occupy an important position among those which can at any time affect the least suspecting, and that it is by no means always a venereal affection. It has been

⁶ Leloir: *Leçons sur la Syphilis*, Paris, 1886. P. 54.

⁷ Tep-ljasched: Cited in Vertelj. *f. Derm. u. Syph.*, 1887, p. 1138.

⁸ Cited by de Beck. *Hard Chancres of the Eyelid and Conj. Cincinnati*, 1888. P. 48.

⁹ Jaffe: *Die Rituelle Circumcision*, etc. Leipzig, 1886.

found to attack the young and the old, quite irrespective of sex and condition, and in all the instances alluded to quite independent of any venereal act or possibility. As each new case or series of cases comes to light, it becomes more and more probable that the number of instances in which syphilitic infection has thus innocently occurred is much greater than is commonly imagined. With a poison so virulent, and capable of being transported and introduced in so many different ways, and, as far as is known, endowed with the possibility of being preserved for an indefinite period, the only wonder is that cases of the non-venereal communication of syphilis are not even more frequent than they are now known to be.

The explanation is found in the nature of the virus, which requires a broken surface of skin or mucous membrane for its admission, and the application of the poison in sufficient quantity; when the conditions for its entrance are all present, inoculation rarely fails to take place on any and every portion of the body.

The reason why syphilis is so preëminently a venereal disease is found in the nature of the venereal act, the tender and delicate structure of the epithelial covering of the parts involved, and the frequent injury, together with the long period of comparative health during which the poison held in the system is capable of infecting others. When similar conditions are at all fulfilled in reference to other portions of the body and under similar circumstances, as in kissing, biting, and other modes of exposure, the contagion takes place equally readily and quite as certainly. Moreover, certain other diseases, as scabies, and the vegetable parasitic affections, are not infrequently communicated in sexual congress, and if this was had during the contagious period of such diseases as small-pox, scarlatina, and diphtheria, these would also be acquired, but in none of these cases would the term "venereal disease" be applied.

The thought here presented is that there is nothing in syphilis which makes it wholly, or necessarily, a venereal disease, nor which warrants the stigma which almost invariably attaches itself to the individual affected therewith. While the large majority of cases are undoubtedly acquired through venereal acts, there are also many cases, and we have seen that Fournier puts it at 25 per cent. in women, in whom the disease is innocently acquired. In some studies recently made I have collected the figures relating to about 4,000 distinct cases of extra-genital chancre in different locations, reported by various observers, a large share of which were non-venereal, and in a list of about one hundred epidemics of non-venereal syphilis which I have also tabulated, upwards of 3,000 victims were mentioned, in addition to indefinite statements where large numbers were alluded to. All this is quite exclusive of the

thousands of cases indefinitely referred to in literature, and the many scattered instances of innocent infection, where no record is made of the site of the chancre. Moreover, in all the accounts of syphilis where it has appeared, and even still exists endemically in many localities, as in the Radezyge of Norway, Sibbens of Scotland, Scherlievo of Dalmatia, and the syphiloid diseases of many countries, constant reference is made to its transference from one person to another by eating and drinking utensils, pipes, also by nursing, etc.

We come now to the most important part of the subject, namely, the prophylaxis of the disease. If, as we have seen, syphilis attacks the innocent in such a relatively considerable proportion of instances, and if every one who acquires the disease through venereal means becomes a focus from which syphilis may spread not only to the guilty but also to the most innocent and unsuspecting, it becomes the highest duty of all to curtail the amount of the disease present, and the ravages it may make, in every possible manner.

From what has preceded it may be readily understood, therefore, that syphilis is a disease which presents no little danger to the public health and to that of every individual. While undoubtedly an exaggerated idea of the perils connected with it could easily be obtained from the material presented in the preceding pages, it is impossible to shut the eyes to the fact that a measure of real danger exists, as is evidenced by the thousands of cases which have been in some manner referred to, where the disease has been acquired in a perfectly innocent manner. No amount of reasoning or argument can do away with the facts which have been quoted on the highest medical authorities, and the records of cases where the disease has been communicated innocently, not only in the daily intercourse and daily occupations of life, but also in the most varied relations; in the care of the sick and of children, in industrial pursuits, and in professional callings.

Syphilis is now one of the principal diseases which affect the human race, and undoubtedly is on the increase, owing to the utter want of all sanitary control over it in the larger part of the world. There are no data accessible to show its relative prevalence in different sections, except those relating to the armies of various nations; in many or most instances, however, even these returns are not available, inasmuch as they relate to "venereal diseases," and not to syphilis as a distinct malady.

In this country, I learn from the Surgeon-General's Office that there is no reliable information in regard to the prevalence of syphilis in the United States, there being not even any data furnished from our army. According to Sturgis,¹⁰ however, in the Army of the Department of the East, in

¹⁰ Sturgis. Relations of Syphilis to the Public Health. Trans. Am. Med. Ass'n, 1877.

the five years from 1870 to 1874, there were 1,488 cases of syphilis, or 4.22 cases per 100 men; in the Mercantile Marine of the United States, during 1872 and 1873, there were 3,779 cases of syphilis, or 15.33 per cent. of all patients treated. In the city of New York no less than 16.19 per cent. of all cases of sickness in the Mercantile Marine service was syphilitic. From data taken from a number of dispensaries and hospitals in New York City, during the year 1873, Dr. Sturgis estimates that the number of persons treated for syphilis during that year, in this city, cannot be far from 50,000.

Some idea of the frequency of syphilis throughout the country may be obtained from the statistics collected by the American Dermatological Association, from different cities in the United States, during the past ten years. It is here found that fully one-tenth of all cases reported by members of the Association were the different lesions of the skin caused by syphilis, it coming next to eczema in frequency. In some respects this presents, perhaps, one of the best means from which to form a judgment in regard to the comparative frequency of this malady, for as syphilis rarely fails to manifest itself on the skin at some period during its course, cases of this disease are more likely to be observed and studied in dermatological practice than in any other department of medicine. It is understood that the data referred to were collected from public and private dermatological practice, and not from venereal clinics.

It will be noticed that in our discussion of the subject very little reference has been made to syphilis as a venereal disease. From reasons which have abundantly appeared in the preceding pages it will be seen that syphilis is as a disease worthy of the utmost study, and from what is known of its various manifestations in the different organs of the body it stands second to none in pathological importance. The fact that in so large a share of cases syphilis happens to be communicated through sexual contact, and in so great a proportion of these it is from impure venereal relations, by no means warrants its relegation to a class of affections the mention of which is tabooed in good society.

While syphilis is a "venereal disease" in a certain sense, its prophylaxis by no means relates entirely to the restriction of venereal diseases, but must be placed upon the broader ground of the protection of the public health, and that of individuals, from a malady which affects the innocent and guilty alike, and which may come both when its dangers are anticipated and guarded against, and when they are least suspected.

In the matter of protection against syphilis, therefore, the subject of prostitution becomes a wholly secondary consideration, and the question is not one of "regulating prostitution," or of inspecting, licensing, or legalizing the "social

evil," or of protecting those engaged in it, but relates to the prevention of the unnecessary extension of a disease which certainly does produce a vast amount of sickness, misery and death.

That the spread of syphilis can be checked is self-evident, as has been conclusively proven by the fact that the large and small epidemics which have been mentioned have all been arrested when the cause has been recognized and sufficient measures have been introduced to prevent the further transference of the poison from one person to another. It is also abundantly shown in those instances where foreign governments have enforced stringent measures looking in this direction. We know certainly that the virus does not develop *de novo*, but that it is always communicated from one individual to another; we know, also, that within a certain period of time the disease ceases to be contagious or communicable, in each individual, so that if no new infection is introduced into a community, and those within it are guarded against communicating the disease until the contagion period has passed, the malady will cease to exist.

Such precautions are exercised, both by the public and by individuals, against other contagious diseases, small-pox, scarlatina, diphtheria, yellow fever, etc., and it is no more than proper that syphilis should be placed in the same category, and protection should be afforded against it, for it counts its victims by thousands, where other diseases count hundreds. The deaths ultimately caused by syphilis are now more than those from small-pox, while the injury to health, and the interference with life-work is much greater in the former than in the latter.

In regard to the means of prophylaxis against syphilis, these relate to the individual and to the public.

Individual prophylaxis will result from a more widespread knowledge on the part of the profession and the laity of the manifestations of syphilis, its dangers and the modes in which it may be communicated. In the history of all the epidemics of this disease, large and small, it is constantly stated that the true nature of the difficulty was not recognized, or that the dangers of infection were not known or appreciated even, until numbers were affected. As our knowledge of syphilis widens, and as the synthetic history of the disease is formed, so much less will be the danger of its communication by innocent means.

A glance at the clinical history of *syphilis insontium* as sketched in the preceding pages shows this very conclusively. For instance, the dangers of its communication by vaccination were never thought of until a considerable number of cases had been reported, and undoubtedly multitudes of others had occurred which were never known to the public; the inoculation by means of Eustachian catheterization was not suspected until many

cases had happened in the practice of a certain physician in Paris, in such a manner that the facts were indisputable; ritual circumcision had been practiced for centuries before it was demonstrated that syphilis could be communicated in the operation; and many other illustrations could be given.

Now, however, that these dangers are known and more or less widely recognized, we no longer have such events to record as are found in earlier years, and infection by lactation and other known methods is yearly becoming less frequent; in most countries such general outbreaks of syphilis as the *Maladies de Brun, de St. Euphémie, de Chavanne-Lure, the Pian de Nerac*, and the many other minor epidemics of the disease, are now well-nigh impossible.

But, on the other hand, it is not equally true that the innocent acquiring of syphilis is really becoming less frequent of late years, for with increased facilities of intercourse the opportunities for its propagation seem to be multiplied, and the actual number of instances of *syphilis insontium* seem to occur in larger proportion than formerly, as may be judged from the abundant records of such cases in current literature. Of course a certain measure of this apparent increase must be ascribed to the more accurate methods of recording in modern times, and the great facility of publication of the same. The present writer has personally recorded some sixty cases of extra-genital chancre, in addition to dozens, or rather hundreds, of cases of hereditary and marital syphilis innocently acquired.

The basis, therefore, upon which personal safety from syphilis must rest, has yet to be reached, for while the disease is allowed to spread unhindered by venereal contact, so long will cases of innocent syphilis continue to abound. This is evidenced by innumerable cases on record where the disease has been acquired both by necessary and unnecessary contact with those thus diseased. A single illustration may be mentioned, where a syphilitic man infected his wife, she then infected a woman who drew the breast, and through this latter woman ten others became infected with syphilis, several of whom died from the disease. How much further the malady spread was not recorded, but it is unlikely that it ended there.

Literature abounds in references to the medico-legal aspect of venereal diseases, and of syphilis in particular, and even a brief abstract of the subject would occupy much more space than can be given, while a transcription of the laws and enactments bearing thereon in other countries might occupy volumes. It is, indeed, a most difficult subject to handle, and one which has occupied the attention of many physicians and jurists, especially in France, Belgium and Germany, and it is in those countries that most efforts have been made by the Governments to stay the progress of the disease.

In Paris, as is known, there is a certain police inspection of public women, and statistics show¹¹ that from 1877 to 1881 between 800 and 1,200 women were each year sent to the prison hospital of St. Lazare with syphilis. The number of individuals who might be infected from these syphilitics can hardly be computed. In other cities in Europe there is also exercised a control over public characters infected with syphilis, and a varying amount of protection from the disease is thus afforded.

In England a reaction took place, as is well known, against the "Contagious Diseases Acts," and they were repealed some ten years ago, and no effort is now made there to control the development of syphilis.

In this country, as far as is known, there are no sanitary safeguards against the spread of syphilis, and there are very few hospital advantages for those thus affected, while in most of the cities of Europe there are large accommodations for this class of patients, amounting in Paris to between 1,000 and 2,000 beds. New York has but a relatively small service at Charity Hospital, while the vast majority of syphilitic patients are treated at the dispensaries, and are free to go about spreading the disease, often with lesions of a most dangerously infective character. It would be difficult to convey an idea of the carelessness and indifference of some of these patients when informed of the dangers attending their disease, and many, indeed, the far larger share of them, disappear from treatment long before they have ceased to be dangerous to others.

The republican ideas of this country would probably never endorse or submit to such sanitary police inspection and restraint as is exercised in certain European cities, but the question arises if there is not some way in which the end can be reached of arresting the spread of this dangerous disease? Can there be no safeguards thrown out which shall prevent its extension here as in certain countries in Europe, notably Russia, where whole communities have been syphilized, and Portugal, where the disease is almost universal?

The first step toward this, we believe, will be found in placing syphilis among other contagious diseases which come under the jurisdiction of the health officers, so that legitimate means can be devised and executed to check its spread, as in the case of other contagious diseases mentioned. The late Marion Sims¹³ alluded to this subject in his address as President of the American Medical Association some years ago, using these words: "There can be no difference of opinion among us regarding the two following propositions: First, we want a system of sanitary inspection and control which

¹¹ Parent-Duchatelet. *De la Prostitution dans la Ville de Paris*, 1857, vol. ii, p. 395.

¹² Vibert. *Nouveau Dict. de Méd. et de Chir. prat.*, vol. xxxiv, 1883, p. 916.

¹³ Sims. *Transactions Amer. Med. Assoc.*, 1876.

will enable us to prevent the importation of syphilis from abroad; and second, we want a system of sanitary inspection and control which will enable us to take charge of the subjects of syphilis at home, and prevent them from spreading it through the community."

The profession is undoubtedly unanimous in regard to the desirability of having such a restraining influence upon syphilis as is indicated in the quotation given, and the only question which arises is as to the best method of carrying the same into effect.

If syphilis were first recognized as one of the great contagious diseases against which it is the duty of the Government to protect the community, the details of operation would probably follow in time, and as the public became aware of the dangers from the disease and the benefits accruing from its restriction, there would be no difficulty in securing proper laws relating to the subject.

It would be out of place here to present any detailed plan of operation, for the subject is of such vast magnitude and importance that it could not be compassed within the limits of this address, even if the writer were possessed of sufficient knowledge and judgment to formulate such a scheme. The suggestion, however, is most earnestly put forward that the time has certainly arrived when the evils resulting from syphilis should be fully recognized and the proper measures taken for its restriction. No longer looked upon as a purely venereal disease, it should be placed under the control of the proper health authorities, and it should be regarded quite as criminal to transmit syphilis knowingly as it is to communicate small-pox, scarlatina or diphtheria. It would then become the public duty of each and every one to guard against the malady, and its spread would be proportionately restricted. The hotel proprietor who knowingly allows one with small-pox to infect others, or who should not exercise due precautions after such a patient had occupied a bed or room, would receive punishment; and I take it that the keeper of a brothel would be subject to like punishment in regard to the careless spread of small-pox, scarlatina or diphtheria. If, now, syphilis were included with these maladies, something would be accomplished toward checking the extension of the disease. Such a person would then see that all the inmates of the house were free from syphilis and, again, would be very careful that no one entering the house should introduce the disease,

That a person may be held liable for communicating syphilis is abundantly shown by the many cases occurring in the literature of foreign countries. The works of Tardieu,¹⁴ Fournier,¹⁵ and others, are full of accounts of legal actions taken and fines and imprisonment inflicted for the wilful or

careless transmission of syphilis, and in some instances those actions were against physicians who had exercised precautions against the same.

How far the matter can be carried in regard to the restraint of syphilitics from exposing others cannot now be stated or even judged. Much enlightenment of the community is yet necessary in regard to the subject, and much thought will be requisite to determine exactly the best methods of controlling the slow but steady extension of the disease which is now taking place. These matters can safely be left for future consideration, after the first step has been taken in regard to placing syphilis among the other contagious diseases which are dangerous to the life and health of the Nation and of individuals. When syphilis is less frequent as a *venereal disease*, the cases of *non-venereal* or innocent syphilis will become proportionately rare.

EXPERT TESTIMONY AND MEDICAL EXPERTS.

Read before the Section on Medical Jurisprudence at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May 9, 1888.

BY ORPHEUS EVERTS, M.D.,
OF COLLEGE HILL, OHIO.

At the Hertford assizes (1699), in the trial of a man accused of murder, the prosecution—as stated by Mr. Justice Stephen, in his learned history of the criminal law of England—"collected a body of doctors to substantiate the proposition propounded by the crown." This case, says the historian, "supplies nearly the earliest instance of a trial depending largely upon the evidence of experts." It is further said, however, by the learned author—and the fact is significant if well considered—that "the defendant contradicted the evidence of the experts in a way that still shows any one who reads the case, that he was fighting with a perfectly idle superstition."

It is a fact conceded by English law-writers, and indicated by the asperity of medical writers towards them, that English judges have never held medical experts, especially in cases of insanity, in high estimation; while in this country the fact is patent to all interested observers, that the testimony of medical experts exercises but little influence in determining verdicts, when not in harmony with popular sentiments, or notions, respecting the merits of any given case.

In view of such facts, may it not be well to consider, briefly, the following questions, namely: What is "Expert Testimony?" What are its essential elements of value? Who are medical experts?

Expert testimony differs from ordinary, or non-professional, testimony in this respect, viz: Ordinary testimony consists of statements of facts as observed by the witness stating them,

¹⁴ Tardieu. *Étude Médico-legale*, etc. Paris, 1879.

¹⁵ Fournier. *Nourrices et Nourrissons Syph.* Paris, 1878.

and opinions based upon such facts, exclusively, the facts having been first fully stated. Expert testimony consists of opinions, based upon facts, as observed by the witness, or presented for his consideration hypothetically—having been observed by others—that he, by reason of peculiar knowledge, is, alone, supposed to be capable of interpreting.

This definition of expert testimony being accepted, it should not be difficult to determine the elements of value pertaining thereto. They are: *First*. Scientific principles generalized from facts, applicable and equal, to the solution of the problem under consideration; and *Second*. Capability on the part of the professed expert to make use of such principles in the solution of the problem given without bias or prevarication.

That scientific principles, applicable, and adequate, to the solution of the problem given, are essential to value, in the constitution of expert testimony, may be inferred from the fact, that without a knowledge of such principles, the testimony of one witness, of equal intelligence, and opportunities of knowing, would be equal in value to that of another. It is, also, apparent that such principles, to be applicable, and adequate, must bear a definite relation to the facts presented for interpretation, and present features of consistency, and accuracy, that admit of no alternative construction. Were it not so: if, for example, the principles of the science of numbers were not definitely related to the facts of accounting—or not so consistent and accurate as to justify perfect confidence in the prediction that two and two, if added, will make four, it would require no argument to convince us that the testimony of an "expert" accountant would be of no especial value, the data of his calculations being unworthy of trust. The same might be said of the expert surveyor, engineer, or astronomer—the value of whose interpretations of facts is derived from the infallible accuracy of the principles of the science of numbers. So, too, with the chemist (the value of his testimony as an expert depending, primarily, upon the accuracy of the principles of his science), if the relation of chemical phenomena to conditions of matter were not definite and uniform—given phenomena being inevitably sequential to given conditions of matter—the expert testimony of the chemist would be comparatively, if not entirely, worthless. Nor is argument needed to convince us that the testimony of the most capable expert, informed by principles of the most accurate science, might be vitiated, or invalidated, by dishonesty.

What, then, is the real value of medical expert testimony? And who should be considered as medical experts? Doctors of medicine are called upon to testify as experts in a range of cases involving questions of malpractice in medicine proper, surgery and obstetrics; and in cases of suspected crime

in which questions of cause of sudden, or unhistoric death arise; and in cases of still greater difficulty and importance, in which questions of mental conditions affecting the rights and privileges of citizens have to be adjudicated. Does that aggregation of knowledge known as "medicine" furnish the necessary principles for their qualifications as experts in all such cases? Are all persons engaged in the practice of medicine, and popularly recognized as "doctors," informed by such principles as do pertain to the so-called "medical sciences." These questions become especially pertinent in view of the fact that there is no recognized standard of educational attainment pre-requisite to either the title or privileges of a doctor of medicine in this country—and the common law admits them all to testify as experts—subject only to the test of cross-examination, as to qualifications, by attorneys who may, or may not, be capable of exposing false pretensions.

When we consider, seriously, the natural capabilities, and acquired knowledges, of a large proportion of the multitude of men and women engaged in the practice of medicine in this country, and the questionable character of much that is taught by the numerous "schools," or sects, of medicine, as science, these questions assume still greater importance; and the presumption of law that all are experts becomes preposterous. Even after eliminating from consideration all persons engaged in the practice of medicine, who are not graduates of reputable, regular, medical schools, the presumption would still be too violent for entertainment.

What, as a matter of fact, does such a presumption imply? Nothing less than an affirmation that the sciences constituting medicine, as taught in our schools, are informed by principles that are definite, comprehensive, and trustworthy beyond dissention; and that every one certified proficient in medicine, by such schools, is competent to make intelligent use of them in the formation of opinions as medical experts, on all subjects.

But to get at the grain that may be in this chaff, let it be admitted that the instruction given in our schools is adequate to qualify medical witnesses to determine, as experts, whether or not an infant found dead was still-born; whether or not certain wounds, seen or described, were necessarily fatal. Whether or not certain deformities following injuries were the results of malpractice. Whether or not, as indicated by symptoms, and post-mortem appearances, and chemical and microscopical examinations, in any given instance, death was effected by poison, etc.; still, the more important qualification of the medical expert to determine questions of mental manifestations, and human actions, whether or not influenced by pathological conditions of brains, or other organs, remains to be accounted for. What has medicine in its widest range of

instruction to offer on this subject? After all, how little! The most thorough-going anatomist is no wiser, respecting the genesis of mind, or the relation of mental phenomena to material conditions, because of his dissections. The most learned and practical chemist knows no more of such matters, because of his analyses, and syntheses, of inorganic and organized bodies, than does the anatomist. Therapeutics throw no light of principles upon the subject. Surgery is dumb, and obstetrics blind, respecting mental science. Physiology—that wonderful and growing science, that is to be, to all other natural sciences, what Aaron's rod was to the rods of the Egyptian magicians—has it not already furnished us with a new psychology, and is it not adequate to our present necessities? Let us see. If we depend upon science to furnish principles answering to our necessities, what are the requisites? It is requisite that such principles shall be applicable, accurate, and indisputable. Does physiology, as now taught in our schools supply the need?

Admit the fact that physiology has already swallowed up all the metaphysical psychologies, and that brains, with their appendages, the nerves, have come to be recognized as essential organs of mind, by which all mental operations are conducted. That when a man, or any other animal, feels, perceives, remembers, imagines, reasons, wills, or acts, it is because of material capabilities, and his brain and nerves do something. That there is a relation more or less definite, of mental capabilities, and characteristics, to size, form, and quality, of brain structures; and an association of certain mental phenomena with certain areas of brain-substance. That modifications of mental capabilities and expressions, constituting all of the many degrees of capability, and peculiarities of expression, known as "idiocy," "imbecility," "mania," "melancholia," and "dementia," may be effected by arrest of cerebral development, and modifications of brain activities, whether effecting constructive or destructive results, and concomitant transmutation of energy—admit all this, as pertaining to present physiological knowledge—still the fact is apparent that we have not been supplied with such scientific principles as would, alone qualify medical experts to testify as such, in the jurisprudence of insanity.

Physiology, as taught in our schools, is indeed, still in doubt respecting the relation of mind to body: whether consciousness is an inherent quality of matter, manifested, as all other qualities are, by motion; or an attribute of a supernatural, indwelling spiritual being, not subject to sensuous observation, but inspiring or instigating, all bodily activities. In doubt, whether mental manifestations are concomitants of brain activities instigated by an immaterial ego, or the

inevitable sequentials of ever-changing conditions of brain-substance, influenced by environments.

Nor can physiology tell us, in accordance with any theory, just what the brain or body, or spirit, does when a man feels, thinks, or acts; nor just what instigates his activities, determines his movements, and differentiates his capabilities. So that, even with these doubts of physiology dispelled, and the subject of man's creation and constitution forever withdrawn from the shadows of superstition, and the overawing presence of the supernatural; and the science of psychology arranged in line with all other natural sciences, in accordance with a monistic theory of the universe—of which men are inseparable particles—we should still be unable to predict, with certainty, the phenomenal sequences of all given conditions of body, or brain, precedent; or to infer, with precision, conditions of body, or brain, by any given mental manifestations, unaided by other than physiological information.

Why then should doctors of medicine be regarded as experts in the jurisprudence of insanity, more than other persons of equal general intelligence? Is it not because of the fact that the official relation of the doctor of medicine to the afflicted, is now, as it ever has been, the most intricate, intimate, and privileged, known, or tolerated, by civilized or savage society; and because his movements as diagnostician, and dispenser of drugs with healing virtues are, to the uninitiated, within that same shadow of superstition that obscures their vision when trying to comprehend the mystery of thought, whether sane or insane? Hence, his greater opportunities of observation and study of the natural history of men and their disorders, and the endless variations of mental phenomena as related to material, observable, facts. Must not any claim of qualification as an expert in the jurisprudence of insanity, therefore, be based upon special, long-continued, intelligent, observation of the insane; and careful, comprehensive, studies of the natural history of insanity—rather than special knowledges derived from medical authorities—however advantageous such knowledges may be to the observer and student? And must not the value of the testimony of experts, so qualified, correspond to the natural capabilities, advantages of education, and experience, and general interest in the subject, of the persons testifying?

In these days, therefore, of specialties in medicine, and the habitual commitment of the insane to hospitals, or asylums, for treatment, or maintenance, at the earliest practicable moment, but few general practitioners of medicine have either the opportunity or disposition to so qualify themselves as experts, in this branch of medical jurisprudence; and but few—to the credit of the profession be it said—voluntarily appear in court pretending to be such.

Of the second essential element of value mentioned, the integrity, and freedom from bias, of the expert witness, but little need be said. Perverted knowledge is more dangerous than conceited ignorance. The natural tendency, of experts, however, is to invalidate their opinions more or less, by the admission of color derived, imperceptibly, it may be, from the interest taken in behalf of the parties employing them. Instigated, also, by professional pride, experts, like detectives, are more zealous in finding what they are supposed to be peculiarly qualified to find, than otherwise; a fact that in this country has been, so far as expert testimony has influenced courts or juries in any way, advantageous to defendants, in cases of criminal prosecution; and of plaintiffs, in cases of contested wills.

These are natural tendencies that experienced experts are capable of overcoming, when recognized; but should not be overlooked in estimating the value of expert testimony.

Of the mercenary and venal expert, nothing need be said. If such there be, they have no proper place in a profession so proverbially unselfish as that of medicine.

Cincinnati Sanitarium, May 4, 1888.

CONDITIONS THAT PRECEDE SERIOUS LESIONS OF THE KIDNEYS.

Read before the Mississippi Valley Medical Society, at St. Louis, Mo., September 26, 1888.

BY C. S. BOND, M.S., M.D.,
OF RICHMOND, IND.

The untiring energy of medical men of this period seems to be expended in a search for the primary causes of disease. At one time we awaited the inevitable result of some fatal malady to observe at the post-mortem its pathology. At a later period we were eagerly watching some distressed patient, slightly affected with disease, with the hope that some intercurrent trouble might destroy him, for the sake of a pathological specimen representing a less severe lesion. To-day we sincerely hope the patient will not die at all, however charming a knowledge might be brought to light by the legacy of his pathology. What we most desire as medical men now, is to avert the more serious lesions by recognizing the first departure from the healthy condition.

After the lungs are largely solidified or filled with purulent cavities it is of little avail to advise a trip to the mountains, or give drugs to bring about renewed health. There is a fearful mortality among such a class of patients; but as we are enabled to recognize the beginning stages, by better means of diagnosis and a more extended knowledge of the disease, we can act more promptly, and either check the malady in its initial stages or, what is better, prevent the patient from having it at all.

What is true of these lung lesions is equally true of serious chronic conditions of the kidneys. Francis Delafield, in his article on chronic parenchymatous nephritis in "Pepper's System of Medicine," speaks thus of the prognosis: "The prognosis of chronic parenchymatous nephritis is not good, but still it is not so bad as that of chronic diffuse nephritis; some of the cases recover and never have any further indications of kidney disease." Of chronic diffuse nephritis he says: "In every case of chronic diffuse nephritis, the natural course of the morbid changes in the kidney tissue is to become more marked and involve more and more of the kidney. . . . The disease is always a very serious one, and terminates regularly in destroying life, but the length of time that will elapse before this fatal termination, and the precise way in which death will take place, are difficult to determine beforehand."

As this is the most frequent form of kidney disease, it will be apparent that the mortality is very great, and if there is hope in the future of doing better work for this death-stricken class of sufferers who annually find premature graves, we must learn to diagnose this disease before the point now reached; before we are able to recognize the conditions by our present methods of diagnosis. When we find a patient suffering from swelling of the extremities and face, muscular twitchings, dyspnoea, neuralgic pains in various parts of the body; a patient who passes albumen, with a diminished quantity of urine; who also passes casts and has a badly disturbed stomach, we are thus led to believe that such an one is beginning, or has begun sometime previous, the career of some serious lesion of the kidney; and our discovery is fraught with but little that can encourage the patient in cases of chronic changes in these organs.

For more than four years past I have been making examinations of urine from patients suspected of having some chronic lesion of the kidneys. The examinations have been conducted with an especial reference to the amount of urea excreted in twenty-four hours by individuals among this class of patients. Not only to cases of these diseases have the examinations extended, but also to other conditions of ill-health and to urine excreted by perfectly healthy individuals so far as I was able to judge. During this time I have made examinations for about eighty patients having the prominent symptoms laid down by the latest and best authorities as those denoting chronic structural changes in the kidneys. For these patients, extending over this space of time, I have a record of nearly 800 examinations, not including the other examinations just referred to relating to other diseases. During this time I have twice called the attention of the Indiana State Medical Society, through papers,¹ to this subject, and have

¹ First paper, entitled "Urea," may be found in Transactions

received encouragement to extend this kind of investigation. I make mention of these observations in regard to urea not because I believe the subject to be an entirely new one, but because I want to call attention to some deductions later on, made from this series of cases, which I believe to be in line with our future knowledge on these subjects.

Many recent authorities have called to our notice the facts that in cases of serious kidney lesions urea is found in the blood in increased quantities, and that this in some way, when very excessive in amount, produces various nervous disturbances, even leading at times to complete coma; yet most of these same authorities have neglected to give us any very definite information concerning the normal quantity of this excrementitious matter which should be thrown off during twenty-four hours, or a knowledge of the amount of decrease in quantity in cases of diseased kidneys. The article by Dr. Delafield, before referred to, makes mention of the deleterious effects of urea when retained in the blood, but in diagnosing the cases he makes no statement concerning the amount of urea excreted in twenty-four hours.

In "Flint's Practice of Medicine" a more absolute statement is found. He says "that the daily quantity of urea is lessened," and in another place states that "it is of importance to estimate the amount of urea excreted daily, for which purpose it is of course necessary to determine the percentage of urea in the total quantity of urine passed in twenty-four hours. The specific gravity of a single specimen of urine is manifestly of no value in forming an idea as to the daily excretion of urea. It is necessary to take into consideration at the same time the quantity of urine voided in the twenty-four hours." While this is of value and corresponds to the latest observations on this subject, still he neglects to call attention to the quantity of urea he deems a lessened quantity, and in what prognostic value he would regard these different conditions; items which are vital in making a proper conclusion. Again, he does not state what should be the *continued daily* excretion of urea, in order that a comparison of these quantities might be made with former records, and with the daily course of the disease as manifested by the symptoms. Bartholow states "that urea is excreted in less than the normal quantity, and varies with the changes in the specific gravity of the urine." Loomis in his "Practice" says: "As the elimination of urea is steadily diminished, it is important to subject the urine to frequent quantitative analyses." This is said in regard to chronic parenchymatous nephritis. In speaking of the waxy kidney he states that "the amount of urea excreted is but little if at all diminished."

It will be seen, therefore, that so far as these authors are concerned, they make very indefinite statements in regard to the excretion of urea in these diseases, and they use this knowledge very little in making a diagnosis or prognosis in an individual case. I believe that what is true with regard to these authors is also, in a greater degree, true of the mass of practitioners. The urine is not examined with reference to the amount of urea excreted in twenty-four hours, and a careful record kept of the quantity for certain days during a long interval of time, so that a comparison can be made with the varying symptoms. That urea is retained in the blood of these patients is acknowledged by all who have given this subject a careful study, and that it produces serious nervous disturbances is also admitted, yet not a great deal of consideration has been given these truths in making up the diagnosis of these lesions. In my experience, retained, or diminished quantities of urea, is one of the constant conditions found in cases answering in all other respects to chronic diseases of the kidneys, and I have begun to regard of very little importance the presence or absence of casts and albumen, except as a differential diagnosis between the varieties of these diseased conditions. I should very much prefer to know that a patient passed constantly but 10 grams of urea daily, as a means of diagnosis, than to find that another case passed large or small quantities of albumen and casts, since by the former knowledge I would not only know the class of disease to which this symptom points, but I would also know something of the extent of the mischief then present in these organs, and could therefore be on my guard in regard to conditions pending. The healthy individual weighing 140 lbs., and living on a mixed diet, should pass between 25 and 35 grams of urea in twenty-four hours. Whereas a non-nitrogenous diet for several days might reduce the quantity of excreted urea to 10 or 12 grams in the same interval, or the failure to take food for several hours in sufficient quantity would lessen the amount excreted for the time; but neither of these conditions would be continuous, and if they were so, the other conditions indicating retained urea, as shown by the symptoms, would not be present; therefore a patient who passes from 10 to 15 grams of urea daily, for a long interval of time, and complies with the other conditions of health, can be said to have some structural changes present in the kidneys, or will, at a longer or shorter interval, have these organs diseased, if this quantity of excreted urea remains constant.

This brings me to the subject to which I most desire to call your attention in this paper, and to make it more plain, I have grouped all the cases contained in my record into three classes, all of which agree in that there is a constant diminished quantity of urea excreted in twenty-four hours,

and this quantity has remained below the normal for several weeks, months or even years, producing a class of symptoms which are also common to all three of the classes to a greater or less degree, while no evidence of any other structural changes could be detected by the most careful examination, except those common to this condition.

CLASS I. This class of patients pass a diminished quantity of urea, from 6 to 18 grams in twenty-four hours. Generally the urine is diminished, but may be greatly increased in quantity during this period. They complain of being exhausted upon the least exertion, also have dyspnoea, vertigo, nausea, and sometimes vomiting. Always complain of neuralgic pains in various regions of the body, generally more common in the intercostal nerves. They have twitchings of the various muscles of the body and œdema of the hands, face, and extremities which is more or less marked. Patients pass albumen and casts in large quantities, and nearly all, if not quite all of such on my list have death marked after their names, or are in a condition that soon will bring about that result. This sad ending is reached by a series of explosions which is attributed by the patient to taking cold, but which seems to be the tendency of the disease after it has reached such a degree of destruction to the renal organs and other tissues of the body. This class of patients is such as is described by authors under the head of chronic Bright's disease.

CLASS II.—This class, as the *first*, pass a diminished quantity of urea in the twenty-four hours with more of a fluctuation in the daily quantity, as shown by several examinations at short intervals, and although this tendency is toward the normal quantity, still very few arrive at this point, and fewer remain long in this condition when the record is still further extended. Patients pass but faint traces of albumen occasionally, with a few granular or epithelial casts, but more often neither albumen nor casts are found. This class of patients have neuralgic pains, vertigo, more or less disturbance of the stomach at times, with exhaustion on slight exertion.

Generally after a long time the *second* class fall into the *first*, as shown by examination of urine and symptoms. A few however pass into the *third* group and after a time even into a condition of apparent health. More of this group consult a physician, than those of the *first* class, for the first time, and something can be done for these patients if the disease is recognized at this point.

CLASS III.—This class comprises a number of patients who pass at longer or shorter intervals diminished quantities of urea in the twenty-four hours, the variation being from 10 to 20 grams, but this condition does not remain constant for repeated examinations, the tendency being gradually to approach the normal standard when properly managed. Still some of these patients pass

from this to the second, and even to the first class and at last die, and post-mortem reveals chronic interstitial nephritis. This class also complain of general weakness, pain in arms and chest, vertigo and general nervous disturbances. They pass no casts or albumen. They have but very slight, if any, œdema in any part of the body and there is almost always a relation existing between the symptoms and the amount of urea excreted. So much is this the case that knowing one you can predict the other, *i. e.*, if the patient excretes more urea the patient feels better and if, on the other hand, the symptoms are worse the excretion is less.

It will be seen that this division into three classes is arbitrary, and that the classes merge into each other in such a way as to have no natural division, and I shall here cite a few individual cases to make this classification more plain. These cases have been chosen because I believe them to be typical ones representing these classes, and are but few among a number that might have been given in each group of all the cases on record.

Henry M., German, age 40. Came to office in September, 1885, complaining of general weakness, headache, nausea, dizziness, shortness of breath, swelling of lower extremities. These symptoms had been more or less severe for several months. Examination showed slight traces of albumen. No casts. Diminished quantity of urine, and passed only 7.2 grams of urea in twenty-four hours. At this time the patient was laying brick and following his trade most of the time. Was eating fairly well of a mixed diet. Upon saline cathartics and digitalis patient seemed to improve for some months, but suddenly, while at work, again began having some of former symptoms and soon grew worse, and in a few weeks was dead. Post-mortem showed chronic interstitial nephritis.

Mrs. S., age 35. Came to office in October, 1884, complaining of dyspnoea, insomnia, vertigo, nausea, pain in intercostal region and headache. Was doing her own work in house. Was eating moderately of a mixed diet. Passed two pints of urine in twenty-four hours, but this contained but 10 grams of urea. Passed no albumen or casts. Repeated examinations at intervals of three or four days showed quantity of urea excreted to range from 10 to 15 grams in twenty-four hours. This condition lasted for ten or twelve months, when extremities began swelling. The dyspnoea increased, albumen and casts appeared in the urine and patient died with chronic interstitial nephritis, as in first class.

Simon M. Had, in April, 1886, pain on passing water. General weakness for several months previous. Pain in left side almost constantly. Passed two pints of urine in twenty-four hours, containing at first 9.6 grams of urea. Patient

presented no other evidence of disease upon careful examination. Passed no albumen or casts. Ate a mixed diet, and could come to office. Patient gradually improved upon saline cathartics, digitalis, and nitro-glycerine, until quantity of urea excreted equalled 28 grams in twenty-four hours, when all distressing symptoms were gone and has been apparently in good health since.

Miss Alice D., age 27. Came to office in April, 1886. Had been treated for uterine misplacement, persistent anæmia, and general nervousness, for several months previous, but gradually grew worse. Careful examination of uterus showed it to be in normal position and in a perfectly healthy condition. Patient was pale. Had headache almost constantly. Pain in lumbar region and limbs. Was very nervous and was gradually losing flesh. No other evidence of disease could be detected. The urine showed, sp. gr. 1010. Acid. Passed two pints in twenty-four hours, with no albumen or casts. Per cent. of urea $\frac{7}{100}$, or 6.7 grams, in twenty-four hours. At this time patient was eating fairly well of a mixed diet. Upon saline cathartics and nitro-glycerine patient gradually improved, as shown by symptoms and quantity of urea excreted, until November, 1886, when she was discharged apparently well and has so continued since.

Miss. P., age 20. Came to office in April, 1886, complaining of headache, dizziness and nausea. Feeling of general weakness. Pain in intercostal region. Chorea in right leg. Had been treated for these symptoms for several months previous but grew no better. Careful examination showed no other evidence of disease. Patient was eating moderately well of a mixed diet. Urine acid. Passed one and a quarter pints in twenty-four hours. No albumen or casts. Per cent. of urea $1\frac{1}{2}$, or 9 grams in twenty-four hours. Upon cathartics and nitro-glycerine patient gradually improved, until in one month she passed 17.2 grams of urea daily, and chorea and pains ceased, but still continued a feeling of general weakness, and she passed no more urea than the quantity named until November, 1886, when quantity reached 20 grams, where it has since remained, with slight variation, and patient is comfortable, but not well.

Another group of this third class of patients begin with the symptoms belonging in common with this class, and afterwards fall into the *second* and even into the *first* class, and die as befalls this class. These cases are cited, as I said above, in order that the general propositions might be made more clear, as well as to give an idea of the general course of treatment of the individual cases.

All these statements, drawn from a record of a number of cases, would seem to indicate that there are conditions which precede the more serious manifestations of chronic kidney lesions, that by a careful examination of the urine for the daily

quantity of urea, together with the symptoms, might be discovered long before the more hopeless symptoms that we now recognize as those of Bright's disease, are manifest. I believe, still further, that in view of these facts it must be admitted that there are changes taking place in the system at large which are in common with the conditions present in the kidneys, that interfere not only with excretion, but with general nutrition, and in some way produce at first irritation and afterwards more or less extensive chronic inflammatory results in various tissues of the body. As still further proof of this proposition it is only necessary to call attention to many inflammations which accompany serious lesions of the kidney, which originate often in the early stages of the diseased condition, and as I said before, I do not believe they are associated as cause and effect. It is a frequently observed fact that retinitis accompanies these diseased kidneys and is generally looked upon as secondary to the more serious kidney lesions, but retinitis has been often discovered in the earliest stages of kidney disease, and has even been pointed out as a forerunner of these conditions. Endocarditis, pericarditis, pleurisy, and other inflammations of serous membranes may also be reckoned as a part of these general disturbances, and a careful examination of the urine will disclose, even before the outbreak of these diseases, an abnormally small quantity of urea excreted by patients answering in all other respects to the conditions laid down above.

The point of departure from the healthy condition in the development of this class of patients is not well defined, but it is safe to say that it is either to be found in the vaso-motor and trophic disturbances due to an accumulation of urea in the blood, or these disturbances cause an interference with the normal excretion, and are then followed by this secondary irritation due to the presence of an abnormally large quantity of urea. It is the purpose of this paper, however, simply to show that at an early stage of these diseases a diminished quantity of urea is excreted in twenty-four hours, and that many of the symptoms at this early period are identical with those found in the well recognized cases of chronic kidney lesions. That this diminished quantity of urea can be made a factor in diagnosis long before albumen and casts occur in the urine, when the patient is going from one doctor to another, being treated for uterine disease, anæmia, dyspepsia, general debility, and nervous exhaustion. That it is the duty of every doctor to make examination of the urine for urea in cases presenting one or more of the prominent symptoms before mentioned in this paper, and to give such treatment as is well known to have the power to eliminate this irritating substance from the blood.

In conclusion, I believe firmly, that if doctors will give careful attention to these examinations

they will be able to recognize a very fatal malady in the infancy of its career, when there is hope of checking it before it reaches that almost hopeless condition now known as Bright's disease, and that you will be surprised many times to find that cases which you, or other doctors, had been treating for other diseases, pass after careful examinations and treatment into the second and third of these classes, and will by proper attention get still better, and after a time entirely recover. On the other hand, you will be equally surprised to find that patients you had been treating for dyspepsia, anæmia, or nervous prostration, will begin to pass albumen and casts, and be horrified at the knowledge that your patient has at last chronic Bright's disease.

THE EDUCATION OF THE DENTIST, YESTERDAY, TO-DAY AND TO- MORROW.

Read at the Joint Meeting of the American Dental Association and the Southern Dental Association, at Louisville, Ky., Aug. 29, 1888.

BY D. R. STUBBLEFIELD, A.M., M.D., D.D.S.,
OF NASHVILLE, TENN.

It does not require a Methuselah to look back to the birthday of Dentistry. She has made such rapid strides forward among the sciences, that, though comparatively young, she demands and receives recognition at the hands of the most erudite. Her ranks are filled by all kinds and nationalities of men, who have all varying degrees of natural fitness. But there was a time when this Cosmopolitan condition did not exist. Then the field was new, and filled almost entirely by uneducated men. There were, however, a few daring souls, who appreciated its importance and who felt an impulsive urging from within of a bias for its special duties and demands. They were the self-elected leaders of a forlorn hope, as it were, and did not expect much but hard work and poor appreciation of their services. But like Gideon's little band, they were filled with that indomitable determination to succeed that almost always wins the battle, tunnels the mountain, or gains the victory of any kind. Conversely to a survival of the fittest, they were the fittest, volunteering themselves to do or die in a chosen life-work.

The point I mean to make, is, that each candidate for the then questionable honor of being a dentist was, by reason of his self-election, generally equipped with a special aptitude for dentistry. There were exceptions to this general rule, doubtless, but they were only sufficient to prove the rule, not invalidate it. The outcome was so uncertain that each applicant for the then questionable honor, determined his fitness by a thorough investigation of his own powers, and then fully consecrated himself to his work. Each

filled his own proper niche in life. Each had a single purpose and was devoted to his cause. Each was willing to work in the very face of poor opportunities to learn, and poorer facilities with which to work. It was by dint of effort often repeated, and against failure as constantly recurring that success was at any time to be achieved. General education was rare, not the rule. Professional generosity was not born, and narrow-minded jealousy stood ready to kill the inquisitive learner. And it was not strange that each was so niggard with his hard-earned store, when we remember the daylight was not broad, but only the dawn threw its uncertain beams upon them. Our Pilgrim Fathers constantly carried their arms against the ever possible attacks of the destroyers; so, these, our professional fathers, guarded their small secrets and jealously kept them against the treachery of others, as they understood it. To be sure, it is not our way, but the customs of that day and this differs widely, and the sun of professional generosity had not dispelled the mists and fogs of ignorance that still obscured the landscape. In the light of the present they appear almost contemptible, and would be so, but for the extenuation, found easily in their different surroundings, which puts them within the pale of a generous charity. Let him, who would have been better under the circumstances that enthralled them, cast the first stone. I do not condone the fault, but I demand, a fair and right, considerate, not to say lenient, judgment for the doers.

And yet they need no defender. They did too much, in the very face of confessed disadvantages, to make the foundation upon which we of to-day stand, for us to deny them credit, or refuse to be grateful. The perfection of an invention is certainly very commendable, but while we honor the perfecter, we must not lose sight of him who conceived the idea from which it grew. Those honest-hearted ones held firmly to their convictions, and dared to promulgate them with their whole lives. They irresistibly command our respect. The world in its ignorance denied the necessity for their work and refused, except from the direst need, to allow them a chance to prove its value. Against the tide of these and all other opposition they urged the bark of dentistry into the haven of respectable recognition. It was a struggle, in effect, like that of the Colonies for Independence, against Tory doctors within the scientific world, and all the opposition from without combined. We have much for which to thank these foundation builders of the past, and we would be recreant to all professional heredity to refuse it. They developed appliances; we use them. They founded colleges of special learning; we are the learners. They questioned all methods and put infinite pains upon each; we are easily able to select the best for each case. They were

the garnerers; we the feeders that live upon their grain. Thus in all things the planters of yesterday feed the open mouths of to-day.

The dentists of to-day are the legitimate result of their determined adherence to principle. We stand so nearly related to them that we are necessarily the objects of their benefactions. We deserve no special credit for being even better than those of yesterday, for we can easily obtain the benefit of their work without a tithe of their labor. The sun of scientific enlightenment has revealed the fact, now fully recognized and conceded by the scoffers of the past, that dental science is necessary to the world, and the profession itself is just as reputable as any of the so-called "learned ones"—that is, in fact, one of the learned ones. The world admits that dentistry is a branch of the general healing art, without reference to its being or not being a specialty of medicine, and as such is entitled to all consideration. I cheerfully give the meed of praise to the dentist of yesterday, who, as he was in many instances uneducated, suffered from a narrow view, yet who carried within him the sign-manual of the Creator, manifesting itself in a special aptitude for the work. We, of to-day, do not flatter ourselves unduly by claiming that, with like careful selection, and better facilities for preparation, we can show greater advancement. But there is a trouble engrafted on us as a body professional, the consideration of which brings us to consider the dentist of to-morrow, namely, that the painstaking, introspective, self-examination, is not practiced in the selection of dentistry as one's life-work, as it was formerly done. It is too often the case that the idea of great emolument (?) proves the allurements, and the question of natural fitness is not even considered, much less settled. In other words, too many men are dentists (so-called at least) without self-election, in the sense of being naturally fitted for the work. One becomes a dentist because his father was a dentist, and he loses sight of the fact that heredity has stamped him his *mother's* boy; another becomes a dentist because a boy friend, who is unusually well fitted for it, is succeeding, although he may be entirely incomparable to his friend.

Dentistry now on a plane with other professions, must expect to suffer like them from the entrance of ill-advised votaries, enticed by adventitious inducements. It is an irrefutable fact that men are to-day forging ahead in the professional world by dint of main strength, where pride and intelligence are backed by fair cultivation, who would evince the grandest human ability in other vocations. It is a pity that inherent power should be misapplied. This could not always be prevented, but judicious selection, based upon mature consideration of character, should be the highest duty of parents. The pride to be this,

that, or the other, developed prematurely in a child, should be most sedulously avoided. Too much care can not be expended to ascertain the trend of the composite inheritance of a child. Pride of station and ancestry should be overcome in the all-important selection of a thoroughly congenial and compatible life-work. The most earnest scrutiny should be kept upon the formative forces bearing upon the child, so that they are not allowed to prove deformative processes, to warp a splendid success into as splendid a failure. The children of any profession are the natural recipients of any hereditary qualification for that profession, but we must not lose sight of the fact that the flow of hereditary is deflected and often changed entirely by the other side of the family. Hence, no invariable rule can be set to govern people who are not invariable. All of Phrenology may not be true, but enough to prove its general truth is found in human faces, built upon substantially the same anatomical bases and with parts that differ but slightly, and yet how different! None can doubt that different men have different qualities of mind as well as different faces, and that, therefore, they are better fitted to pursue some profession than any profession, to advantage. And yet, there is a general intelligence that enables some to follow almost any profession with credit, when faithful application is made. Such men may be thrown out of the channel best suited to them, and, still, against a natural bent, they develop success out of failure. None will dare to deny, however, that they would have done more, gone higher, or reflected greater luster on themselves in that calling that satisfied their whole nature than the work in which they had been perfunctorily engaged. If this is true, then the special work of dentistry offers the best field for some of the diverse minds of the world.

These very ones I commend, out of which to make the dentists of to-morrow. They are Heaven-elected dentists, if they properly qualify themselves to discharge its obligations.

The profession should demand three things to be done, one by them, one by itself and one by the schools. *First*, demand that a broad foundation of primary education should be laid, as preliminary to all other intellectual preparation. I go back of professional training in this and demand the same educational qualifications that the most learned profession ever demands. To prepare for law, they search all fields of educational lore, drink at all fountains of knowledge, and then put on a capstone of law. Just such a course, I claim, is best, if not always possible, for a dental student, and even more important, since the issue of life and death is, at times, in his hands. More is demanded of the studenthood to-day in all branches than ever before, and dental students must expect exactions commensurate with any other. Minds trained primarily and cultivated

persons, added to that trend of character that is the natural qualification, should be considered the *sine qua non* for correctly prepared dental students. Trained minds, that they may bring skillful intelligence to work out the conceptions of our high and progressive science; and cultivated persons, because our intimate personal associations demand that we be agreeable in necessarily painful duties. Such only would rise to the highest conceptions of our future. The beginners are on an average too crude from which to obtain the best results. They deem themselves well qualified to meet all requirements, when they decide to honor our profession with their patronage. The will is essential, but not all-sufficient. The day has come when better methods must prevail. Years ago, it was excusable to commence the study of dentistry without a proper foundation, but I insist that such a course is not up to the requirements of the times. A log cabin or a wigwam might be built upon the level earth, but a Washington Monument, or a Liberty Enlightening the World, must have a deeply laid and a well constructed foundation. Dentistry of to-morrow must over-top dentistry of to-day, and the basis must be deepened and broadened as the top goes upward. To do this the profession must awake to its responsibility and actively demand of our dental schools that they shall be more exacting as to a suitable preliminary education of their matriculates, and that they shall provide the means necessary and demand of their students a broader and more thorough knowledge of the fundamental sciences of medicine and surgery, before graduating them as Doctors of Dental Surgery.

Second, one by itself, and that is to establish a higher, better moral tone. The old idea that what was good enough for my father is good enough for me, must be supplanted by a more progressive, a more enlightened view of our calling, and the essential factors that constitute its higher standard. Such a revolution can not be accomplished in a day. Harvest is always preceded by a preparation and proper seeding, and a long time of patient waiting. But it ought to be done, it must be done, if we intend to rise with the tide of the general progress of the hour. Each dentist must become a radiant center of elevated moral tone, be the circle that surrounds him great or small.

Third, one by the schools, which must assist by a sensible elevation of the standard for entrance, a judicious extension of curriculum, and a more rigid demand for thoroughness before conferring degrees. Cast iron regulations can not avail, because the modifications at any point are not identical or comparable to those at any other point. Ends must be aimed at; means will take care of themselves. Let the sentiment be unanimous and utterances conform to it. The moral backing

thus developed will engender courage to begin the revolution. Be assured, it can not be wrought by chance, and indifference will result in forging more indissolubly the fetters that bind us to the traditions of our past. Schools can not do more than reflect the impress of the profession in the aggregate, as seen upon the collected pupils from all sides. Let every dentist constitute himself a committee of one to properly prepare one student. The great rolling river is just what its tributary springs make it, and dentistry will be elevated or depressed by your efforts and mine. It behoves us to rise to the emergency and do our best to discharge the obligation that we assumed in the marriage vows of our high calling. It is unquestionably essential that the schools shall be more thorough, but our duty lies back of their work. We have one responsibility and we must act, we must work, or die out of the way of those who will.

MEDICAL PROGRESS.

EFFECT OF COFFEE ON THE URINE.—DR. DUMONT, of Louvain, has undertaken a series of researches on the effect of coffee drinking on the urine, from which it appears that, though the diurnal quantity of urine is not seriously interfered with, the composition undergoes a very decided change. Dr. Dumont kept the subjects of his researches for some days on ordinary diet, the constituents of which were determined. During part of the time only was coffee added, the quantity being three cups—corresponding to about two ounces of roasted coffee—per diem. By regular and careful analyses of the urine, it was found that during the days when coffee was taken the urea passed was increased by about seventy-five grains. The effect on the urea was produced immediately the coffee was commenced, and as soon as it was omitted the quantity of urea returned to that which it had exhibited previously.—*Lancet*, Sept. 29, 1888.

ARSENIC IN RHEUMATOID ARTHRITIS.—DR. WILLIAM OSLER recommends Fowler's solution in initial doses of five drops three times a day in the treatment of rheumatoid arthritis. This dose is gradually increased to the limit of tolerance and then held there, the effects of the drug being carefully watched.—*Medical Record*, November 24, 1888.

ANTIPYRIN IN LARYNGISMUS STRIDULUS.—MR. MONTAGU PERCIVAL, of Waratah, Tasmania, reports successful results in 24 cases of laryngismus stridulus treated with doses of from 2 to 5 grains of antipyrin every hour. The cases were due to sudden changes of temperature, with damp winds.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, DECEMBER 22, 1888.

"PENNY WISE, POUND FOOLISH."

We hasten to endorse the Peoria *Transcript's* proposition that the general assembly promptly abolish the State Board of Health. Founded originally for the promotion of the sanitary condition of the people it has lapsed into a mere technicality of medical practice and a mutual protective society for the profession of Illinois. No valid objections could be advanced against the Board of Health being operated in the interest of the medical profession if it were not maintained at the expense of the tax-payers. The cities are governed by sanitary regulations of their own, while in the country districts any justice of the peace is empowered to act in behalf of the protection of public health. The Board of Health seems to be an unnecessary institution and one from which the people derive little if any benefit. As its maintenance is quite expensive it should be altogether abolished in the interest of economy.—*Bloomington (Ill.) Eye*.

Were Cicero living at the present day he would not have to go far to find journalistic Catalines to whom he could say: *Quosque tandem abutere nostra patientia, O Catalina!* The *Bloomington Eye* is sadly in need of a pair of spectacles with which to read the act of Legislature creating the Illinois State Board of Health, and that will enable it to see what the Board has done and is doing. The Board was created for two objects: 1. To promote and take care of the sanitary condition of the State of Illinois. 2. To regulate medical practice in the State.

It has been but a few months since we showed (THE JOURNAL, June 9, 1888, p. 719-720) that the tax-payers of Illinois are fully reimbursed for all the expenses of the State Board of Health by what the Board saves to the State in its sanitary

work; that in one instance, the small-pox epidemic of 1880-82, the Board caused a saving, outside of Chicago, of 1,517 cases, 320 lives, and more than \$2,790,000 (exclusive of actual life-value). Dr. Farr estimated each life as worth \$795 to the State; so that the saving in life value was \$254,400; and we thus have a total of \$3,044,400 saved by *sanitary work* at one time, not to speak of what has been done since 1882. In regard to the regulation of medical practice, careful estimates show that since the Board has practically cleared the State of itinerants, quacks, and charlatans, two years ago, \$450,000 have been saved to the people of the State.

We may say, then, that the case stands as though the State Board of Health had deposited with the State Treasurer \$3,494,400, from which to draw interest for its maintenance. At a rate of interest of 3 per cent. this would give the Board \$104,832 annually, which amount, we may remark, the Board is *not* spending. The expenditure of the Board from the State Treasury for the fiscal year ended September 30, 1888, was the small sum of \$8,559.25. The State Railway Commission spends more than this and does far less work. If the *Bloomington Eye* cannot see this we would advise it to consult an oculist and an arithmetic. If the people of Illinois are unwilling to pay less than 3 per cent. on all moneys actually saved to them, they have not the business tact and foresight for which we give them credit. The house to house inspection and State sanitary survey, which have been carried on since 1884, have done a great deal towards preventing disease and reducing the death-rate of the State. If anyone can make out a balance in favor of the medical profession on account of a board of health, we shall be glad to see how it is made. How much money was put into the pockets of the physicians of Illinois when the State Board prevented 1,517 cases of small-pox?

In the yellow fever epidemic of 1878-79, the action of the Board saved thousands of dollars to the State; and with the Sanitary Council of the Mississippi Valley it has done a great deal in keeping yellow fever out of this section. It has done efficient work in preventing the introduction of cholera into the country. Since the organization of the Board epidemics of scarlet fever, diphtheria and typhoid fever have been less prevalent, and when outbreaks of these dis-

eases have occurred, they have been limited, to a great extent, through the Preventable Disease circulars of the Board. It is but a few months since the Secretary of the Board refused to quarantine against yellow fever refugees at Cairo, when quarantine would have been wholly unnecessary, and thus saved thousands of dollars to the Contingent Fund of the Board, and from \$50,000 to \$100,000 to the business interests of the State. The Illinois State Board of Health has also been active in securing the coöperation of the various State Health authorities in preventing the introduction and spread of the various epidemic diseases.

Admitting for a moment that one of the functions of the State Board of Health is that of "a mutual protective society for the profession of Illinois," we may ask if certain facts do not justify State protection of the profession. Is there any other profession that gives its time, skill, and services so freely, and so gratuitously to the people of the State, as the medical profession? Who gives gratuitous service to the poor man, in and out of the hospital, newspaper editors or doctors? Who is most frequently robbed of just earnings, the merchant or the doctor? Who gives gratuitous advice most frequently, thus cutting off his own income, the lawyer or the physician? When an epidemic is raging, who so often gives time, health, and even life to aid the sufferers and stay the disease, as the doctor? Can the editor of the *Peoria Transcript* and *Bloomington Eye*, tell us of a legal dispensary, to which people go for free advice when they are well able to pay for it? Can they tell us of a clothing, a food, a fuel dispensary to which dishonest, well-to-do people go under the guise of objects of charity and obtain relief for which they are fully able to pay?

The suggestion that "any justice of the peace is empowered to act in behalf of the protection of public health," is one that no one in full possession of the common mental powers of the human being would make. Why not leave health matters to the shoemaker, the coalheaver, or the editor of the country paper? Either one knows as much about health matters as the justice of the peace. And why not give over the entire management of the asylums for the insane to the County Clerks, the State Railway Commission to plumbers, and the financial manage-

ment of the State to the Sheriff of Sangamon County?

After all, it is not difficult to account for such expressions of irresponsible opinion as those quoted. The State Board of Health, by driving itinerant quacks and Indian doctors from the State, has reduced the income from advertisements of some of the newspapers. *Hinc illæ lachrymæ.*

SANITARY INFORMATION BY COMPARISON.

DR. HORLBECK, of Charleston, has recently visited several of the large Northern cities gathering data for a report to the Charleston Board of Health on the sanitary system of the city. This method of obtaining information in regard to health and sanitary matters is certainly to be commended, as likely to be much more productive of good results than information acquired from books and printed reports. And since, according to the recent reports of the Registrar-General of Great Britain, there has been so much improvement of late years in the sanitary condition of Great Britain, notwithstanding the crowded condition of the population, it is very probable that it would be productive of good results if some of our health officers would pay an occasional visit to the Victorian Kingdom, and see how it is kept in such a healthy condition.

Not to speak of the many matters, methods, and institutions of sanitary interest that may be found on the Continent of Europe, it is not too much to say that any State would be largely the gainer that would send an intelligent health officer on a one year's commission to England and Scotland to study their sanitary institutions and methods. At this distance we are likely to think that a visit to one or two cities would be sufficient. Such is far from being the case. One can find something new and interesting in sanitation in almost every city of Great Britain. The sanitary methods of Edinburgh differ from those of Liverpool, and those of Liverpool from those of Manchester. The sewage farms of Edinburgh could be compared with those of a few other places in Great Britain, and these with those of Berlin. The end is the same—the prevention of disease and reduction of death-rate; but the means by which the end is attained are often essentially different. Actual knowledge, gained by actual see-

ing and experience is always more valuable than that gained from reading.

The proof of what we say may be found in the enormous strides in the management of asylums for the insane, due in great part to actual comparison of methods in various institutions in all parts of the world. One or two thousand dollars, or even more, spent in such comparisons and observations, might be the means of saving fifty times the amount to a State or City in less than five years. The amount of money spent in this country, annually, upon useless experiments, because of ignorance of what has been done, and of ignorance of suitable methods and conditions for certain places. At best, health officers have far too little practical preliminary training, which is certainly as necessary for their efficiency as is hospital practice for medical students before they enter upon private practice.

EDITORIAL NOTES.

OPIUM SMUGGLING ON OUR NORTHERN BORDER.—A few days since a wagon loaded with 800 pounds of crude opium was seized and the driver arrested by United States Revenue Officers on the Dakota line west of St. Vincent. About the same time 476 pounds, prepared for smoking and packed in boxes, were seized at Denver. The boxes had been sent from St. Paul, marked "household goods" and consigned to A. Neilson, who was also arrested. Another large amount, valued at about \$20,000, was found by Customs Officers in a shanty near Port Hope, where it had been landed by a schooner from Sarnia, Ont. The man in charge of the opium in the shanty made his escape. These several seizures, added to the recent developments with which our readers are familiar, render it quite certain that an extensive and well organized system of opium smuggling has been carried on for some time through the British possessions and over our border at various points. The knowledge now in possession of the United States revenue officers will probably enable them to break up the illicit trade, and punish, at least, some of the chief offenders.

WATER-SUPPLY OF JERSEY CITY.—Sixty physicians in Jersey City have signed a report to the Board of Works, saying that the water of the city is good enough to drink. The Passaic River re-

ceives the sewage and street washings of Paterson, N. J., the sewage and drainage of Pompton and Passaic City, it is said, and the offal from slaughter houses, the waste from factories, and the drainage from the dwellings along the river. Several chemists have found the water of the Passaic River contaminated by sewage. The physicians of Newark (supplied with the same water) assert that the water-supply of that city is impure. The Croton water is much better than that supplied to Jersey City, and yet Drs. John C. Peters and Cyrus Edson say it is far too impure for New York. As a matter of fact, it would be far better if physicians were to trust to expert analyses rather than to personal opinions, possibly not well founded. No water is good enough to drink if it can be made better.

AN INCOMPETENT AND USELESS OFFICER is the present Coroner of San Francisco, if he may be judged out of his own mouth. The City Physician of San Francisco has recently resigned, and his letter of resignation was uncomplimentary to the Sheriff and Coroner. The Coroner stated at the meeting of the Board of Health that time and time again he had shielded the City Physician "to prevent the too evident fact of his incompetency from showing itself to the public." If the Coroner spoke the truth he is an unfaithful officer; if he did not speak the truth he is equally unworthy of confidence. In either case the city would probably be the gainer were he to resign. At best, the sooner the non-medical coroner becomes a thing of the past, the better for all concerned.

SANITATION IN INDIA.—During the 20 years ending 1885, says Surgeon-General G. Bidie, the deaths from small-pox in India averaged over 33,000 per annum, and for every death about 10 persons had the disease and suffered mutilation. In the Madras Presidency the four great destroyers of human life are cholera, small-pox, fever and bowel complaints, the average number of deaths from these diseases alone being about 339,000 every year. In the 50 years ending 1886, the total losses to England, France, Germany, and Austria on battle-fields amounted to but 386,000, against the annual 339,000 of the Madras Presidency from disease. The country is studded by towns and villages that have been rendered terribly foul by the filth of centuries.

DR. H. G. WILDMAN, of the firm Wildman and McCoy, of this city, whose license to practice medicine had been revoked by the Illinois State Board of Health on account of alleged unprofessional practices, took an appeal to the Governor of the State, who has now reversed the decision of the State Board. Would it not be a benefit to all parties to have the Chicago Medico-Legal Society, composed of intelligent medical and legal gentlemen, fully discuss and endeavor to define the proper powers and duties of the State Board under the State law for regulating the practice of medicine? Does the Board possess both legislative and judicial powers, or neither?

DISEASED MEAT AS FOOD.—The State Board of Health of New York recently received a communication from Monroe, N. Y., to the effect that pleuro-pneumonia had broken out among the cattle there, and that 150 cattle had been killed. The local health officer asked whether the cattle so killed should be allowed to go on the market as beef. An emphatic negative answer was returned to this part of the dispatch, and the officer was directed to prevent any such use of the carcasses. It is a commentary on modern methods of educating the people that health officers need ask such questions.

LARYNGOTOMY ON A HORSE.—Dr. S. W. B. Werntz, a veterinary surgeon of Philadelphia, recently performed laryngotomy on a valuable horse, for the condition known as "weazing." After the wound was closed the horse took food and water without difficulty, and at last accounts seemed to be doing well.

A NURSE'S HOME has been opened in Philadelphia, having been established by the managers of the Pennsylvania Hospital. The Home affords accommodations for twenty-five nurses. The rooms are well fitted up, and the nucleus of a library has been formed.

AN ANATOMICAL SOCIETY has been organized by the students of the University of Maryland, Dr. J. EDWIN MICHAEL being the President. The University Museum is the place of meeting and study.

DR. J. B. BOWEN, a prominent physician of Bridgeton, N. J., died on Dec. 12. He was 50 years of age, and was graduated from the University of Pennsylvania in 1861.

SOCIETY PROCEEDINGS.

Gynæcological Society of Boston.

Regular Meeting, May 10, 1888.

THE PRESIDENT, HORACE C. WHITE, M.D., IN THE CHAIR.

DR. SAMUEL N. NELSON exhibited

AN EXTRA-UTERINE FŒTATION,

and the pelvic organs of a patient who had died from abdominal hæmorrhage due to rupture of the sac. On opening the abdominal cavity at the autopsy it was found to be filled with clotted blood intermingled with the coils of intestine. In the right iliac region was the ruptured sac from which the blood had escaped. This was found on dissection and removal to have originated in the fimbriated extremity of the right Fallopian tube. The sac was about $2\frac{1}{2}$ inches in diameter, and contained a foetus about 4 inches long. The uterus was enlarged, the cavity measuring 4 inches, and the anterior wall on section showing a thickness of 1 inch, including a well marked decidua, which was $\frac{1}{4}$ inch in thickness. The left ovary and tube were normal.

DR. HENRY O. MARCY: The history of the case from which was removed the specimen just shown was very interesting. Mrs. X., æt. about 35 years, was rather fleshy, with thick abdominal walls. She was the mother of seven children, but had not been pregnant for seven years, since which time her menses had been irregular. The patient suffered from indefinite abdominal pains with nausea, with sensation of sinking at the stomach. There was a slight uterine flow which, for the most part, confined her to the bed for four weeks prior to death. During this time she steadily lost flesh and strength. The breasts were soft and flaccid. The abdomen was slightly tender on pressure. The uterus was somewhat enlarged and slightly retroverted, but easily movable. There was no enlargement to be felt about the uterus by the most careful examination, and extra-uterine fœtation was dismissed from the discussion. She had seemed gradually to improve until the night before death, when she was seized with most excruciating pains resulting in collapse. She was seen by Dr. Nelson and me a little before her death. The cause of the extreme condition at that time was plainly to be attributed to hæmorrhage within the abdominal cavity from unknown cause.

DR. LEVI F. WARNER: In these cases there is generally nothing that calls to the mind of the physician the real condition of things. Usually they are not suspected. Once Dr. Hitchcock did suspect the condition, and he saved the patient's life by having everything in readiness for opera-

tion. In a certain case coming to my knowledge the doctor aspirated and withdrew 2 ozs. of fresh blood, and it was called an hæmatocele by an expert. The aspiration was continued until the woman died. Here the doctor was thrown off his guard, for the woman was 42 years old; she had been married twenty-one years and had never before been pregnant. She was in good general health, and was having excessive flooding.

DR. MARCY: I have seen two other cases. Mrs. M., æt. about 30 years, had been married five years and was never before pregnant. She was a delicate girl, had menstruated with difficulty but somewhat regularly. Five months previous to death she suffered from nausea and vomiting with general abdominal discomfort, bearing-down sensations, etc. She had flowed more or less continuously for five weeks. The uterus was somewhat enlarged, anteflexed, easily movable, not tender, os patulous, and the sound was introduced $2\frac{3}{4}$ inches. There was a slight fulness to the right of the uterus, which was slightly tender on pressure; this was supposed at the time to be a periuterine inflammation, and attributed by the patient to overstrain. She was sent to the country for recuperative rest. When seen six weeks later, the patient was sick in bed with symptoms of intestinal obstruction. There was a distinct tumor, size of double fist, a little to the right of the median line, above the pubis, tender and only slightly movable. The uterus was deflected to the left and was $3\frac{1}{2}$ inches in depth. I advised an exploratory laparotomy with the diagnosis uncertain. After consultation with an expert from New York City the operation was declined. Death occurred a few days later, and the autopsy exhibited a ruptured sac with the foetus, 5 inches in length, lying free in the abdominal cavity. The coils of small intestine were agglutinated about the mass, forming a distinctive intestinal obstruction. The pressure from above had been sufficient to cause rupture of the sac, and its contents emptied into the abdominal cavity. Peritonitis supervened, ending in death. Dr. Marcy exhibited the specimen, together with longitudinal sections through the entire uterus, which were exquisitely mounted between glass plates made by Dr. Nelson, of Boston. They are sufficiently thin to serve for projection upon the screen by the stereopticon. The endometrium showed the decidua vera beautifully formed, with its enlarged utricular glands. The uterus was nearly double its normal size.

The second case I saw perhaps twelve years ago in consultation with Dr. Wellington, of Cambridge. A young colored woman was in collapse. She had not menstruated for about three months, and the symptoms of internal hæmorrhage were so clearly marked as to make the diagnosis of extra-uterine foetation with rupture very probable. I thought laparotomy advised, returned for instru-

ments but, unfortunately, examined the authorities without finding a precedent for the operation; consequently I failed to do what my judgment dictated. Death occurred within twelve hours. The autopsy revealed a ruptured tube, with the lower abdomen filled with clotted blood. The sac was not larger than a hen's egg. I believe the operation would have been feasible.

DR. WM. G. WHEELER: A trouble in making the diagnosis in these cases is that flooding is frequently taken for menstruation. I know of one case in which the foetus was three to four months old and the woman insisted that she had never been pregnant and that menstruation had continued up to a very few days. The sound introduced showed the size of the uterus to be increased, and this was all that could be made out. The woman died and a quart of pure blood was found in the abdominal cavity, together with the foetus. Here hemorrhage was mistaken for menstruation.

DR. AUGUSTUS P. CLARK: At one time Dr. Thomas advocated electricity for these cases, but lately this method of treatment has been criticized. Can laparotomy be substituted and is it advisable?

DR. HELEN L. BETTS: What else would Dr. Wheeler do?

DR. WHEELER answered: A radical operation.

DR. MARCY: Dr. Thomas has reported seven or eight cases in which the diagnosis was clear, and electricity destroyed the foetus, but the general feeling now is in favor of laparotomy. Dr. Gordon has told of an operation with cure. He opened, removed, and treated as if he had removed a tumor. There has been only one other case in the United States similar to this. If the condition of things is known do not wait for bad results. Probably the cases are more common than are supposed, for the doctors will not report their fatal cases. I know of a case where a woman died at the age of 80, and a calcareous foetus was found which she had carried for 40 years. Also another case where there was a cyst containing foetus bones. Here nature had acted as a surgeon.

DR. WARNER: I recall the case in which the foetus bones were found after 40 years. Dr. Hitchcock made the diagnosis in Dr. Gordon's case and did the operation. If the diagnosis is certain in a given case we may probably save the patient.

DR. CLARK: Thomas does not say anything about the future of his cases. What is the use of destroying the foetus? Septicæmia may supervene if rupture should occur later.

DR. SAMUEL N. NELSON made a demonstration of the

BEST METHOD OF STAINING TUBERCLE-BACILLI IN SPUTUM.

The reader said that his apology for bringing a subject not strictly gynecological before the

society was its manifest importance indirectly. The great advantage to be derived from the examination of sputum was to ascertain the presence or to determine upon the absence of the *bacilli-tuberculosis* before the physical signs of a cavity are apparent or distinct. In a well marked case where percussion elicits relative dullness and sometimes even flatness; when the respiratory sound, obtained by auscultation, is either bronchial or cavernous; and when the correlative vocal signs are present, viz.: either bronchophony with the loud and whispered voice or exaggerated vocal resonance; and especially where these are taken in connection with the cough and expectoration, the emaciation and other symptoms belonging to the history of the disease, then it is not necessary to go to an expert bacteriologist for a diagnosis; for he can only corroborate that which you have already made. When, however, the physical signs are not well marked, a careful examination of the sputum may make certain a doubt, and will guide you materially in the treatment of any given case and aid your prognosis.

A careful résumé of the various methods, with their modifications, that have severally been recommended by various authors for the detection of the *bacilli-tuberculosis* was then given. In general, they all have the same foundation, viz.: the fixation of a thin layer of the suspected sputum on a coverglass; the diffuse staining of this layer with one of the aniline dyes; the bleaching, which affects everything except the tubercle bacilli themselves, so that they are alone brilliantly stained and all else is colorless; and lastly, not important, but advantageous, the staining with a contrast color, which stains all other microorganisms, both bacilli and cocci, as well as the epithelial cells and pus cells.

The primary staining may be done quickly or slowly. When done quickly, the staining fluid must be boiled in contact with the coverglass-film; when done slowly the staining fluid is applied to the coverglass-film for 12 to 24 hours at the ordinary temperature.

After trying nearly all of the methods that have been recommended for the primary staining, the reader said that he preferred the rapid staining, using the formula of Ziehl:

R. Fuchsin	1 part
Alcohol	10 parts
Carbolic Acid	5 "
Water	100 " mg

Instead of boiling this staining fluid in a watch glass with the coverglasses floating film downwards on the surface of the staining fluid, as is ordinarily recommended, the reader prefers to hold the coverglass film upwards with a pair of forceps, to place a drop or two of the staining fluid thereon, and to boil it by holding the coverglass over the flame of an alcohol lamp. After boiling it is allowed to cool.

For bleaching the reader uses nitric acid, diluted (nitric acid 1 part to water 4 or 5 parts), into which the stained coverglass is dipped (without washing) and at once transferred (without washing) as quickly as possible to absolute alcohol, through which a few passes are made, and then it is washed under the stream of the water bottle. The action of the acid changes the red color of the fuchsin to a nearly black color, but in the alcohol the red color is restored and then fades. Care should be taken not to bleach too much, for by the prolonged action of the acid and alcohol, even the tubercle bacilli themselves will yield their color.

When properly bleached the contrast stain, methyl-blue, is applied, in watery solution, and, after washing, the coverglass can be mounted and examined with the microscope, when *the tubercle bacilli, if present, are seen as red rods lying among other blue-stained elements.* A good $\frac{1}{4}$ or $\frac{1}{8}$ inch dry lens will distinguish them, but their characteristic formation can only be seen with higher powers, *e. g.*, the oil immersion, $\frac{1}{8}$, $\frac{1}{12}$, or $\frac{1}{18}$ inch lenses, with an Abbé condenser, *i. e.*, under the best conditions of illumination.

Instead of fuchsin, gentian violet may be used for the primary stain, and, in this case, vesuvin (Bismark brown) must be used as a contrast stain, instead of methyl blue.

Résumé:

- A. Stain with fuchsin.
- B. Bleach by dipping into diluted nitric acid (1 to 5).
- C. Finish bleaching in alcohol.
- D. Wash.
- E. Stain with methyl blue (contrast stain).
- F. Wash.

Then mount and examine with microscope.

After explaining the method of staining the *bacilli-tuberculosis* the reader demonstrated the method by examining specimens of sputum brought for the purpose by members of the Society. The result of the examination was, in each case, satisfactory to the one who brought the specimen, although certain test specimens were brought that were not supposed to contain any tubercle bacilli.

Philadelphia County Medical Society.

Stated Meeting, November 28, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D.,
IN THE CHAIR.

DR. WILLIAM HUNT read a paper on

DIABETIC GANGRENE.

There are about twenty pages of the great *Index-Catalogue of the Library of the Surgeon-General's Office* given to each of the subjects of

gangrene and diabetes. There are but two monographs catalogued, one by Giron, Paris, 1881, and one by Peyrot, a student, 1878, who reports, I think, thirty-nine cases; these are not in the College of Physician's Library. Then ten isolated cases are reported in the French journals from 1856 to 1868; most of these are in *L'Union Médicale*. I will give a brief summary of these cases:

1. A case of phlegmon and gangrene of the anterior and external region of the right knee. Free incisions were made. The patient was discovered to have intermittent diabetes. There was recovery from the local lesion.

2. A patient known to be diabetic had his right toe to slough; it was detached with scissors. From this he recovered slowly. He was placed on strict antidiabetic treatment, but was careless and the whole foot became gangrenous. There was great abdominal pain, and necrosis of the gastric mucous membrane was diagnosed; death speedily followed; no autopsy.

3. A diabetic of 60 years of age is reported, who died from extensive gangrene of the thigh and back.

4. A doctor, æt. 65, fell down from an attack of cerebral congestion; never sick before. Diabetes was discovered. This was on the 21st of the month; on the 25th great mortification took place involving the cellular tissue deeply, followed by death.

5. A man had a leg amputated for what was thought to be senile gangrene. He recovered slowly from this, then the other leg was attacked, first at the toes. He was found to be a diabetic.

6. Another diabetic is mentioned with spontaneous sphacelus of the right toe.

7. A colonel with his right foot gangrenous died of diabetes. Other cases are here and there mentioned with spots of gangrene.

8. A man of 70, after great pain, had gangrene, first in left toes, then in right. The disease was thought to be senile, but he was found to be a diabetic. The absence of ammoniacal changes is noted in this case, and the question is raised whether the urine of diabetics undergoes these changes.

9. A case of complete destruction of the plantar aponeurosis by gangrene in a diabetic is reported with recovery from that lesion.

10. A man of 55, cut his corn—gangrene followed and diabetes was present; he died. He had before this no symptoms of diabetes—in fact, was never sick. He went through troublesome family affairs, which he felt deeply, some time before.

These patients where the sex is given were males. Mental troubles are more than once given as a cause. Intermittence in the appearance of sugar is noted in two cases. In fact, in one of them, the interne tells his chief, that he (the

chief) had made a mistake. The interne had examined the urine when sugar was absent, but it returned in full. The majority of these cases were in the better walks of life. But the work worthy of a higher dignity of title than a monograph is by Marchal (de Calvi), Paris, 1864: *Recherches sur les Accidents Diabétiques et Essai d'une Théorie Générale du Diabète*. Some of his cases are among those quoted above. Marchal's book has reports of 133 cases of all sorts of what I may call extra lesions occurring during the progress of diabetes, collected both before and after the discovery. Of the 133 cases, gangrene *per se* occurred in fifty-seven. The seats of it were, in the lower extremities 35, lungs 7, hand 3, pleura 2, shoulder 1. Nucha (not ordinary carbuncle) 2, nose 1 (necrosis). Plantar aponeurosis 2, ribs necrosis 1, forearm 1, back 1, gangrenous plaques 1, although the latter are reported in several other cases. I shall not pretend to particularize these cases I refer any one interested to. My purpose is to show that gangrene in diabetes is something more than a coincidence. The extraordinary case No. 39, almost of itself sustains the position. A man of 58 years, came under observation. The case is given in detail and is thus summed up by Marchal. "Thus in the space of six years from 1850 to 1856, the patient was attacked successively with first, a necrosis of the first phalanx of the second toe, which was amputated; second, with a sphacelus of the whole foot and inferior part of the leg of the same limb, which was also amputated; third, with a skin gangrene of the other leg which gave place to a callous ulcer; fourth, with a gangrenous inflammation of the base of the great toe, which left a deep and intractable ulcer; fifth, with a sphacelus of the first four toes, which were also amputated."

Any fair-minded man would say that, if we can develop so much in such a limited range of inquiry and in such a short time, and then ask himself what might be found out by further inquiry, not only among ourselves but throughout the country, diabetic gangrene is certainly something more than a mere coincidence of the disease diabetes. I sent out a small number of inquiries to physicians and surgeons in our city, selecting those whom I thought would know most about the matter, and also made personal inquiries of some. The questions were: 1. How many cases of diabetic gangrene have come under your notice or treatment? 2. What was the social standing of the patients—wealthy, medium, poor, hospital, or private—their ages and sex? The next question would appear to be rather a side issue, but it was made, in passing, to ascertain whether what is almost universally stated about diabetes is legendary, or is the result of carefully collated observation; it also bears upon gangrene of the pulmonary organs—it is: 3. How many of *all* of your

diabetics had consumption, or died with it, and was there anything like gangrene of the lungs. I received thirty answers, including myself; of these, seven had seen no gangrene. They were Tyson, Longstreth, A. V. Meigs, Hutchinson, Packard, Sinkler, Keen. Twenty-five reported 64 cases, viz.: T. G. Morton 13, Da Costa 5, Hunt 5, Agnew 6, J. C. Wilson 3, S. Solis-Cohen 3 (two of them in consultation with other practitioners), Dr. Brush 4 (one case intermittent), D. F. Woods, J. H. Brinton, S. W. Gross, E. L. Duer, Murray Cheston, W. A. Edwards, J. W. Hearn, 2 each. John Ashhurst, Jr., Elwood Wilson, L. K. Baldwin, W. Osler, James Darrach, A. Fricke, W. F. Atlee, C. B. Penrose, J. H. Musser, W. B. Hopkins, T. K. Morton, 1 case each.

I was particular that the cases should be known by actual examination and record to be diabetic. Thus, Dr. Morton at first answered me that he had seen 20 or 25 cases, not knowing my object. I have no doubt that he has seen that number, for he and I have had our attention drawn to this matter for years, but he actually verified the 13 in his list. Dr. T. R. Neilson was certain he had two cases to report from the Episcopal Hospital, but he found no record of sugar, so I rejected them. I mention these facts to illustrate the care that has been taken. The ages, where given, were: 1 between 30 and 40; 2 between 40 and 50; 11, 50 and 60; 12, 60 and 70; 10, 70 and 80; 2, 80 and 90. One exceptional case of Morton's a diabetic aged 19, in whom gangrenous sloughing took place after a needle operation for cataract, is down, and one of S. Solis-Cohen's cases was a young female. Of the sexes given, 24 were females and 25 males. Of social standing, where given, 16 were wealthy, 23 medium, 9 poor, and of these 6 were in hospital. Dr. Brush reports a most interesting case of a female diabetic aged 40, a lunatic. She had large ecchymoses on her limbs which became gangrenous; she died. The autopsy revealed a gumma the size of a large pea in the floor of the fourth ventricle. The seats of gangrene, where reported, are: Lower extremities—below the knee, 37; thigh and buttock 2; nucha (not ordinary carbuncle) 2; external genitals in female 1; lungs 3; fingers 3; back 1; eyes 1. Had I allowed myself to include ordinary carbuncles and boils in the gangrenes, to which class they belong, the list would have been greatly increased.

How many diabetics have consumption or die of it? Marchal says he has known of but few diabetics to die of consumption, but he is rather inclined to adopt the general view. A pamphlet published at Oxford in 1745, called "A Mechanical Inquiry into the Nature, Causes, Seat, and Cure of Diabetes, with an Explication of the most Remarkable Symptoms," says, if the patient be "too far advanced by a neglect of proper remedies, the person so affected in reality dies of a consumption." Dr. Tyson has notes of 55 cases

in private practice since 1884. Of these, 18 have died, 4 of consumption. Dr. Longstreth says a very large proportion die of pulmonary complications called consumption.

Dr. A. V. Meigs has notes of 5 deaths from diabetes, none from consumption, nor does he know of any consumption in those diabetics who have passed into other hands, nor, as I understand, of any in his father's practice. Dr. James H. Hutchinson remembers 1 diabetic who died of consumption. Dr. Packard remembers none. Dr. J. Ashhurst, Jr., does not remember a consumptive. Dr. Sinkler: none of his cases died of consumption. Dr. Da Costa does not remember a case of gangrene of the lungs, but has seen a sufficient number die of phthisis as to believe in the generally held opinion. Dr. Agnew has seen no consumption, one of gangrene of the lungs. Dr. Elwood Wilson does not remember a death from consumption. Dr. J. C. Wilson cannot answer as to consumption, thinks it not so common as supposed; seen one case of gangrene of lungs. Dr. D. F. Woods has had no consumption deaths. Dr. L. K. Baldwin, one case complicated with consumption. Dr. Osler, two died of consumption, one of gangrene of lungs. Dr. Darrach, no consumption. Dr. S. W. Gross, none; Dr. Keen, none; Dr. A. Fricke, none; Dr. J. H. Brinton none; Dr. Hearn, none; Dr. Hunt remembers one woman who was said to have consumption with diabetes. Dr. Brush, one phthisis death, and reports one lady of 71, three of whose family had consumption; she escaped it. Dr. F. G. Morton, one; Dr. W. A. Edwards, none; Dr. Murray Cheston, six cases, no consumption; Dr. W. F. Atlee, none; Dr. T. S. K. Morton, none; Dr. Musser says he knows the cause of death in nine cases. None of phthisis.

Thus among all the diabetics noted by the practitioners mentioned, and we do not know how many are included, but certainly the 55 of Tyson, the 64 of my collection, the 9 of Musser, and 16 non-gangrenous ones specified by 7 others, in all 144, we find but 11 deaths from phthisis. And yet Dr. Thomas S. K. Morton in an essay on diabetes has somewhere picked up a statement, from an authority whose name he has missed, that 43 per cent. of diabetics are killed by phthisis sooner or later. Roberts, 1885, says that one-half of them die with cough, catarrh, phthisis, and other lung complications, when prolonged to the third year, and Aiken quoting him, evidently in mistake, says to first year. Dr. George B. Wood says, "In the great majority of cases the patients die of phthisis." Drs. Da Costa and Longstreth, whose opinions are entitled to great weight, make general statements in their answers; Dr. Longstreth cautiously stating it is called consumption. From a conversation with Dr. W. Pepper, who gives no return, he adopts the consumption view, and Dr. J. Cheston Morris coincides.

S. Solis-Cohen says: "I cannot find accurate statistics as to consumption. Think at least one-third of the cases that I have seen, died of pulmonary affections." Griesinger, quoted by Niemeyer, says "one-half of the cases die of phthisis." Watson says, "some think phthisis universal in diabetes, but it is not so." Flint, quoting Ogle, reports fourteen cases, with deaths from scrofulous or tubercular disease in seven of them. Niemeyer says "that pulmonary tuberculosis hastens the fatal issue." What one of latest authority, C. Hilton Fagge (1886) says, is important. "Diabetes is frequent cause of a phthisis (almost the 1745 expression) which is peculiarly pneumonic in character. Its relation to ordinary pulmonic disease is still doubtful," and after giving certain facts he says, "hence it supports very strongly the opinion that the pulmonary affection in the disease is not of a tubercular origin." He kept notes of the diabetic deaths in Guy's Hospital and in twenty years out of 40 such deaths, 17 died of phthisis. You will notice how indefinite and general some of the statements above given are, without figures to sustain them. Blau, in his review in the late number of *Schmidt's Jahrbuch*, already quoted as to gangrene under the head of "diseases of the lungs in diabetes," says, in substance, "that the question whether so-called diabetic phthisis is the same as ordinary tubercular disease of the lungs is only to be settled by the proved presence in both of the same bacillus." Authorities, Imérman, Rüttimeyer, von Merkel, and von Leyden, are quoted as having observed absolute differences between the two diseases both from examinations of sputa and also by post-mortem. A case is given in which during life the patient had all the symptoms of tubercular phthisis. Except that bacilli were not found in the sputum, and at the autopsy the appearances were totally different from those found in that disease, and these appearances are noted in the text. The bacillus tuberculosis was nowhere found. A case having almost the same post-mortem appearances as this one is reported by Da Costa, in the *Philadelphia Medical and Surgical Reporter*, vol. i, page 8, January, 1887. The bacillus, as in the preceding case, was absent.

This record, considering the large number of consumptives in communities like ours would seem to show that the cases in point are *consumptives with supervening diabetes, and not diabetics with supervening consumption*. I leave the question for wiser heads to determine. Diabetics die, as my inquiries and experience confirm, with coma, œdema of the lungs, and exhaustion.

I have nine cases to speak of, five of whom were gangrenous, and three rapidly advancing toward it when death overtook them. One was peculiar and unverified; all are dead; one was in medium circumstances, all the others decidedly

wealthy. The ages ranged from 50 to 93, four of them being above 70, five were women, four men. In none of them was the classical emaciation present at any time. The disease was intermittent in two. The urine in one of these cases would range as low as 1010 specific gravity, with slight traces of sugar, and then advance to 1030-1035 with evidence of abundance of it. I took a specimen of this low gravity urine to Dr. Casper Wister, of the Mutual Life Insurance Company of New York. He tested it himself and was much surprised, and concluded not to accept statements of "no sugar," founded upon specific gravity alone. Another case also ranged from low to high at varying times, but not so marked as the first. This teaches us not to be too sure in saying, as we all often do, "there's no use looking for sugar in that," when the gravity is 1020 and under. Austin Flint, Jr., reports a diabetic case with the gravity of 1011½. The seats of the gangrene in five of my cases were, foot and leg below knee three, thigh and buttock one, nucha (not ordinary carbuncle) one.

Gangrenes, as a rule, are generally of the soft or humid kind. This, however, depends much upon the part involved. Where the tissues are succulent, the gangrene will be also of that character; where they are composed mostly of skin, tendon, and bone, they will approach the senile gangrenes in appearance. The remark made by Holmes Coote is applicable. He, speaking of the terms used in the descriptions of gangrene in general, as dry, moist, etc., says, "when death of a part takes place rapidly, the vessels still contain blood and the usual fluids, and the mortified parts are moist and soft. When on the other hand, the death is slower, there is usually a deficiency of the supply of blood; the vessels become empty and the part hardens and withers." There is this distinctive difference between the diabetic and the senile gangrenes according to my observation. The former rarely or never present the clear-cut line of demarcation between the dead and the living parts that is characteristic of the latter. This fact, with a want of the decided dryness and shrivelling of the senile variety, should suggest the diabetic form, but in any case the urine should be examined.

I have this interesting observation to make about one patient: A lady, æt 93 years, who did not have gangrene. This past summer she was in more than usual good health. I know positively she had no diabetes until shortly before her death; not only from the want of rational symptoms, but also from recent examining of the urine. I went with her to Newport in June, and left her there. In passing through Newport in the latter part of July, I saw her; she was perfectly well, and her delight was to drive twice a day. I was at Bar Harbor in August, and received a telegram asking me to come at once to

see her at Newport. She was dead before I arrived, and I learned from Dr. Cleveland, of New York, who attended her, that she was sick but eight days, and had developed an *acute* diabetes, which rapidly proved fatal. I had no hesitation in saying, that had she survived the first fierceness of the attack, she would have had to contend with gangrene. The opinion was given, not because of her age, but because of the diabetes.

Sugar in the urine has been developed by falls upon the head, and also in certain forms of apoplexies, but I have just made a, to me, most interesting observation.

In January, 1885, a wealthy gentleman, a long-time patient of mine, of most vigorous constitution, then 76 years of age, had an apoplectic seizure, from which he reacted, and finally settled down into a chronic semi-paralytic. On the 9th of this November, 1888, in the evening, I was suddenly summoned to see him by his son-in-law, a physician. He was comatose, face very much flushed, temperature 103°, pulse 120, and had Cheyne-Stokes respiration. There was no increase of paralysis of the extremities. Basic effusion was diagnosed. Under treatment he improved, and was very much better by morning.

His urine during his sickness had been repeatedly examined, and, with the exception, at times, of slight traces of albumen, there was nothing abnormal. On my morning visit, mindful of the symptoms of the night before, I proposed an immediate examination of the urine. This was done, and decided sugar reactions were produced by fresh Fehling solution.

Here was auto-physiology. Temporary pressure upon, and disturbance of the respiratory centers, and also pressure upon the diabetic regions of Bernard. As the effusion disappeared with the mending of the patient's condition, the sugar has gone with it, and now the tests give no traces of it. It will be interesting in this case if the patient survives, to note both as to sugar and as to gangrene.

I had written thus about this case, when I had occasion to make another note. I saw the patient daily for four or five days, when it looked as though matters were about to resume their old course, and I made the next appointment for two days ahead. But on the 15th I was summoned again. The patient was in deep coma, breathing 60 per minute, pulse 150. *The urine gave sugar reactions more decided than before.* Respiration could be stopped by reflex at once—that is, by any peripheral irritation about the mouth or thorax. This would occur on an attempt to give liquids, then after a few automatic adjustments, the breathing would go on as rapidly as before. Within two hours death took place. There was no filling of the bronchi with mucus. The patient simply stopped breathing. Pressure on the pneumogastric centers was profound. It was a

quick and permanent application of the air-brakes.

In practice we all have our puzzling cases. A distinguished, wealthy lawyer was attacked with an obscure disease. It was rapidly fatal. Dr. James Darrach was the physician, and I was sent for in consultation. It is not necessary to give the details. I cannot remember whether the urine was examined; certainly, I think, not for sugar. Symptoms of sepsis were marked, and among the incidents there was enormous swelling of the abdominal walls, both anteriorly and laterally. I made free and deep incisions into the flanks, and from the cellular tissue mephitic gases and fluids, like those that flow from moist gangrenes, came in abundance. I think, in the light of what has been developed in my researches, that that patient died from an acute attack of diabetic gangrene.

There was no consumption, or even a suggestion of it, in *any* diabetic of whatever kind that I have seen, except the one I vaguely remember, which I have already spoken of as being in the hospital when I was resident. I now submit, from what we have heard, whether among all the gangrenes mentioned in books and indexes, viz., traumatic, hospital, senile, symmetrical, spontaneous, puerperal, visceral, infantile, congenital, cutaneous, mephitic, spreading, exanæmic, arterial, static, dry, wet, moist, humid, white, etc., the much-neglected diabetic gangrene should not be included? We have seen that *diabetic* gangrene makes, with good reason, higher pathological claims to notice than most of the kinds above given. I should not be surprised to find, after thorough investigation, that in *numbers*, in civil practice, diabetic gangrenes would be found to hold the second place, traumatic gangrenes, including those from frost-bite, burns, and scalds, only exceeding them.

A few remarks upon the proximate and remote causes of diabetes which also have a bearing upon the production of gangrene. We have seen that diabetes is no disease of the poor in general. Drs. Tyson, Morton, and Darrach will give you some interesting facts about this.¹ I also have a good instance to add, illustrating the enchantment of distance even in science. Last Sunday I was speaking with Prof. Penrose on this matter of the poor and the rich, when he said, "And yet

¹ In the discussion which followed this paper Dr. Tyson said: "In regard to the infrequency of diabetes among the poor no better proof could be given than in the fact that in the Philadelphia Hospital in which more than a thousand patients are present at one time, it will often be impossible for weeks to get a case for lecture." Dr. Morton also stated: "An inquiry recently made of the superintendents of our State hospitals for the insane shows that although more than twenty thousand patients belonging to the indigent class have been under the care of the present medical officers of these hospitals, there has not, it seems, been a single case of diabetic gangrene in the institutions at Harrisburg, Dixmont, Danville, Norristown, or Warren." Dr. James Darrach said: "Dr. Hunt has mentioned that diabetes is a disease of the well-to-do, and referred to the rarity of the disease in hospital patients and among the poor. This would appear to be corroborated by the statement of Dr. Jordas, who states that in an aggregate of 22,735 admissions into, I think, four hospitals in Lisbon, there was not one case of diabetes; and of 5,700 deaths in 1862, four only were from this cause."

I don't know, Hunt; you remember the cases that used to be in the hospital when we were residents, and the work done in studying them under Drs. Wood and Pepper?" I remember all that, but did not remember the number of cases. I kept my own counsel, and next day I went for the record. The number of diabetics, as such, that were admitted into the hospital during Dr. Penrose's residency, 1851-53, two years, were just *three*; so, in the lapse of time, much work over a few cases is translated into the same work distributed over many cases.

From 1842 to 1888 inclusive, a period of forty-seven years, *fifty-nine* cases of diabetes were admitted into the hospital, an average of 1.28 cases per year. From 1842 to 1848 there was not a case; from 1858 to 1869 there was not a case, and in the first part of this time the Pennsylvania Hospital was practically the only hospital in our city for the respectable poor to go to for treatment. Thus, from the wealthy and middle classes of this community, I have brought to light more than twice as many cases of diabetes, most of them recent, as have been treated in the Pennsylvania Hospital for fifty years.

Diabetes seems, in its affinities, to be more nearly allied to gout than to phthisis. One of Dr. Cheston's gangrene patients was a man over six feet high, weighing 250 pounds. He was a waiter in a private family, and surrounded with all the accessories of wealth. I could not establish that excess in the use of wine or strong drink had much, if anything, to do with the production of diabetes. A diabetic drunkard is rare; I have never seen one. I think, however, that over-feeding plays a much more important part as a proximate cause. Aside from the boulimia that is often an accompaniment of the disease, it will be found that most diabetics are over-eaters in habit. I know that most of my patients were, to say the least, good feeders, and some of them excessive ones, and one was noted in this way. Well-to-do people, in times of peace and plenty, eat too much. The laboring classes may eat as much in quantity, but they work it off. Excess in food clogs, excess in drink crazes; so the former habit has the advantage in morals, but which kills most is a question.

I shall only glance at the theories of diabetes. Faults of the nervous, vascular, and visceral systems have been, respectively by some, and *all* together by others, considered to be at the bottom of the trouble. I incline to deranged vaso-motor effects (stasis or paralysis of the vessels, with or without atheroma or arterial sclerosis) as most explanatory. What better fact could we wish to sustain this position than the influence of disease on virility, a condition almost absolutely dependent upon normal vaso-motor function? Men with diabetes are mostly impotent; Marchal says, always so. He gives some strange cases of marital infe-

licities, such as unfortunate charges of infidelity by wives against their husbands, when really the poor fellows were helpless diabetics. One of these is described as a veritable athlete, and he was an example of the fact that in this disease great and peculiar strength in one direction may for a time coexist with great and peculiar weakness in another. The knowledge of diabetes is ancient, and, in looking over the old records I thought that I might stumble on one of diabetic gangrene, but in this I was disappointed.²

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Nature and Origin of Tetanus—Compression and Costal Resection in Empyema—Unglazed Tissue Paper for Dressings—Disinfection of Instruments—Muscular Atrophy of the Limbs.

In my last letter I sent you a short extract of a note by Drs. Berger and Richelot on the contagiousness of tetanus. From a communication to the Academy of Medicine on the nature and origin of tetanus, it will be seen that M. Alphonse Guérin does not believe in the equine origin of the disease. He admits that tetanus is inoculable, but what the agents are that are inoculated has not yet been demonstrated. He says that one may inoculate fragments of flesh taken at the neighborhood of the wound which was the seat of tetanus, pieces of spinal marrow of the bulb, of cerebral matter, are equally inoculable. The blood alone is not. These experiments prove that there is a virus, but no one can say in what it consists. The transmission of tetanus by inoculation is therefore acceptable, but that which is not, is that the agents of this transmission are micro-organisms. That which is certain is that the cases of tetanus in the wounded dressed by the procedure of Lister, are extremely numerous. The agents of contagion would therefore be refractory to carbolic acid and to the other antiseptic agents. M. Guérin is disposed to think that this malady is engendered by a poison analogous to strychnine and to toxine of Brieger, which idea, he says, would be more satisfactory to the mind

² Coincident with the reading of the proof of this paper, I received (December 6, 1888) a copy of the *Berliner klinische Wochenschrift*, No. 47, November 19, 1888. It contains the first part of an article by Dr. Max Schüller, of Berlin, called "Ein Beitrag zur Kenntniss der phlegmonösen und granösen Process bei Diabetes." The author also intimates that gangrene, etc., is more than a mere coincidence in diabetes. He says: "While many cases of glycosuria, as, for example, those following experimental researches upon and injuries of the central nervous system, have found an essential clearing up, the relation between pus formations, furuncle, carbuncle, gangrenous process, and glycosuria is still quite dark. The view that these cases are essentially only complications of an unrecognized diabetes has still its adherents. I now have nothing new to offer as explanatory, and will consider this part of the subject no further."

than micro-organisms. To show that tetanus is not of equine origin, M. Guérin supports himself on the opinion of different authors, and in particular on that of M. Manoury, a veterinarian of Chartres, who, of 150 cases of tetanus that came under his observation, had never treated two tetanic animals in the same form, and had never seen a single case produced by contagion in man. M. Guérin then asks how the cases of tetanus observed at sea and in countries where the equine race does not exist, may be explained?

At the same meeting of the Academy, Dr. Polailion, presented, in the name of Professor Dubreuil of Montpellier, a note, in which the latter vaunted elastic compression, combined with costal resections, in the treatment of empyema. The application of the compression is practiced in the following manner: The chest is surrounded by a Sayre's apparatus, except the level of a rib which had been resected. At this level, a tube is placed which enters the pleura and above the cotton wadding. The chest is then tightly surrounded with an elastic band. The compression is made only at the level of the part uncovered, the apparatus of Sayre preserving the other parts of the chest. Every day, before applying the elastic band, a cupping glass is placed on the opening of the pleura, by which means a small quantity of pus is obtained. The author concludes that, with this mode of treatment, the resection, which involves the ribs only to a very small extent, is certainly less dangerous than in Estlander's operation.

Dr. Bedoin has published in the *Union Médicale* an interesting paper on dressing with absorbent paper which is made of unglazed tissue paper, such as is employed for making cigarettes. These dressings are intended to replace gauze, lint, linen or cotton bandages, as being less bulky and less accessible to different septic germs than these latter are, and is also much less expensive. It may be employed with all the antiseptic precautions prescribed by Lister either in a dry or moist state. This paper is an excellent medium for most antiseptic remedies, and whenever indicated, may be prepared beforehand with morphine, belladonna, cocaine, iodine, etc. According to the author, the application of these dressings has been attended with excellent results in various cases, such as wounds, burns, blisters, affections of the skin and eyes, etc. Comparative experiments have shown that the absorbent property possessed by this paper lint is one-third greater than that of cotton lint. It is absolutely necessary to cover the dressings with an impermeable external covering.

Dr. Redard, in a note read by him before the Société de Chirurgie, insisted on the absolute necessity of disinfecting all surgical instruments and objects employed in dressing wounds. He considers that the methods generally employed

for the purpose are defective, for it is only by prolonged contact with the antiseptic substance that instruments and sponges, etc., can be rendered sterile. Disinfection by heat, says the author, is an excellent method, but all instruments cannot be exposed to flame with impunity, and their immersion is only efficient at a temperature of 110° to 120° and when the contact with the liquid is prolonged during three-quarters of an hour for sounds, trocars, forceps, and during ten minutes for bistouries. Glycerine and oil have certain drawbacks, the former emits a thick strong-smelling smoke when boiling, the latter requires an apparatus for regulating the temperature. Dr. Redard highly recommends solutions of chemically pure chloride of calcium, especially when mixed with glycerine, boiling at from 110° to 120° . The method of disinfection by steam at a pressure at 110° with Dr. Redard's apparatus, prolonged during fifteen or twenty minutes is very simple, practicable and infallible.

At the last meeting of the Academy of Medicine in November, Dr. Desnos, physician to the Hôpital de la Charité, read a note on a case of muscular atrophy of the four limbs of very simple evolution, which came on during pregnancy and consecutively to obstinate vomiting. The case was that of a young woman in her third pregnancy, very much anæmiated by previous hemorrhagic metritis and in whom, all therapeutic means having failed, premature labor had to be induced at the fifth month of her pregnancy. From that time, the atrophy made no further progress, it remained localized in the four members, but with the aid of electricity and hydrotherapy improvement rapidly set in and the patient is now considered completely cured. Dr. Desnos entered at length into the pathogeny of these accidents and directed attention to divers hypotheses the most plausible of which being that of a myelitis affecting the anterior horns of the spinal marrow the cells of which preside over the nutrition of the muscular system. A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Headaches and other Nervous Symptoms due to Functional Eye-troubles. The Death of Dr. Sands.

At the last meeting of the County Medical Association Dr. Oppenheimer, the well-known specialist, read a paper of much interest and practical value to general practitioners, his subject being, "Headaches and other Nervous Symptoms caused by Functional Anomalies of the Eye." The effect upon health of errors of refraction, such as myopia and hyperopia, he said, had been so extensively

discussed that the necessity for their correction was now generally recognized; and his object, therefore, was to direct attention to the functional errors only. Eye-strain, although frequently overlooked by the busy family physician, was a not uncommon cause of headache, and by its early recognition many a patient might be spared the fruitless use of a long list of remedies in the attempt to secure relief. A number of the best neurologists and general practitioners, however, had gradually during the last few years come to an appreciation of the fact that a considerable proportion of these cases of headache, neurasthenia, insomnia, etc., depend on some functional disturbances about the eyes; and it had been a matter of surprise to oculists even to discover how many of the merely functional derangements of the nervous system, seemingly unconnected with the functions of the eyes, could be relieved by the careful study and treatment of the muscular apparatus of these organs.

Before alluding more particularly to the various symptoms which he had noticed as existing in connection with muscular asthenopia, and which subsequently disappeared, completely or partially, under treatment directed towards the restoration of the muscular balance, he referred to some points in the anatomy and physiology of the ocular muscles, and called special attention to the fact that in all its actions each muscle was steadied and balanced by more or less action of the opposing muscle, and that all the muscles of the eyeball contributed to the steadiness of its motion and the maintenance of its positions. It was to be remembered, he said, that each eye has to be directed to a nicety in order that the image shall fall upon the most sensitive part of the retina, and that both eyes may see the same object, with the result of binocular vision, as it is called. It was also to be borne in mind that the tractor muscles of the two eyes are supplied by six different nerves, and that the failure or weakening of any one of these will disturb the harmonious working of both eyes. Hence it was a marvel, not that we sometimes have muscular insufficiencies and loss of balance, but that we ever have binocular vision at all.

A muscle was clearly insufficient, he went on to say, which could not hold the eye in its proper place against its antagonist and allowed this antagonist to draw the eye to its own side, thus causing a squint. But technically a muscle was said to be insufficient when it could do its work, but did it under such a strain as to cause unpleasant symptoms and sensations. Having described the method of testing for muscular insufficiency, and its variety and degree when present, with prisms, he remarked that the condition of the muscles naturally varied in the same individual at different times and in differing conditions of health. There was, so far as his experience went, no ob-

servable relation between the severity of the symptoms present and the degree of insufficiency; and some people went comfortably about their business with an amount of insufficiency that would drive those of a more nervous organization to distraction.

In most cases that had come under his observation there was some trouble of refraction complicating the muscular difficulty, and in quite a number of them, as he believed, causing it. The headache, which was perhaps the most constant symptom, was by no means confined to the frontal or temporal regions, as might be expected, but might be general, or possibly referred to the vertex or occiput. The pain might be constant, or come on with the use of the eyes, or perhaps only after the eyes had been used for some hours. In some instances it was of a neuralgic character and very severe. Another quite frequent symptom was inability, or loss of disposition, to use the mind; and, strange to say, patients thus affected are the ones most apt to complain also of insomnia. Dizziness, or some form of vertigo, was also a common symptom, and it was sure to be complained of where the muscles were barely able to maintain an equilibrium; so that the least lapse would bring on diplopia. In one case severe tinnitus aurium, in addition to headache and dizziness, was promptly relieved by the wearing of appropriate glasses. Those who derived great pleasure from reading were apt to be depressed on discovering that they were no longer able to use their eyes *ad libitum*, and this depression was likely to produce in persons of a nervous temperament all sorts of neurasthenic symptoms. A radical change was often observed in this class of patients as soon as they found that they could use their eyes with comfort again.

In regard to the treatment, Dr. Oppenheimer took a very common-sense view which commended itself strongly to those present, and he did not hesitate to express his pronounced disapproval of the teachings of Dr. George Stevens, the well-known champion of tenotomy. He quoted a paragraph from a recent article of Dr. Stevens in the *Archives of Ophthalmology*, the gist of which was as follows: If there is a lateral balance and a vertical balance to your test, but the outer muscles do not appear quite as strong as they should be, according to an arbitrary standard; and if you do not increase the strength of these supposedly weak muscles by practice of a few minutes at a time for several days, and do not succeed in awakening them either by resting them or letting prisms do their work for them—then an operation is undoubtedly permissible. If, said Dr. Oppenheimer, we remembered that this operation would be a tenotomy of the internus muscle, the muscle which of all others needed to be strong in order to converge properly, and that there was more or less convergence required for all distances within 20 feet (which meant, in a city, almost all the

time), we got an idea to what a dangerous extent a hobby could be ridden. In such a case he himself would say: If a weak prism, worn for a few days, gives relief, let the patient continue to wear it, and when it ceases to answer, increase its strength as required. So far from setting up an absolute standard for the strength of each set of muscles, and dividing tendons until this standard was reached, he believed it was as irrational to set up a standard of muscular power, and call deviations from this abnormal, as to set up a standard of weight for an adult man and call every one not coming up to this weight atrophic. He did not wish to have it inferred, however, that he did not tenotomize the internus for a pronounced insufficiency of the externus. He had certainly had some excellent results from doing this when he thought it really indicated; but he said he did not operate for ailments imagined by the patient or the physician, nor did he claim to make effectual cures of epilepsy or chorea by performing tenotomy.

Having given the details of his method of treating these cases of eye-strain for headaches and other nervous symptoms, he summed up the treatment as follows:

1. All hygienic and medical indications to be carefully carried out by the attending physician.
2. A most careful correction of the refraction and accommodation (which in itself is not infrequently sufficient to effect a cure).
3. Correction of muscular insufficiencies, begin with a less degree of strength than apparently necessary, and increased if this should prove insufficient.

4. Tenotomy, if prisms do not relieve, or if they cause too much discomfort of themselves.

And, finally, when the patient can use his eyes with comfort with the correction given him, I rest satisfied, and cannot think any operation justifiable under these conditions.

When it was necessary to use prisms of such high degree as to give the patient the uncomfortable sense of everything being convex or concave, he advised tenotomy, and in performing this he follows the method of Snellen; beginning at the middle of the tendon and gradually cutting outward as far as might be required. In the slighter grades of insufficiency he greatly preferred the use of prisms to tenotomy for the following reasons:

1. It was the easiest for the patient.
2. It was usually sufficient to restore the patient to the comfortable use of his eyes.
3. Restoration to perfect health and condition quite often restored the equilibrium of the muscles, and a tenotomy might under those circumstances incline the balance in the opposite direction. In this connection he said that he could not too strongly express his conviction that out-of-door exercise and all other hygienic and medical means to restore the general health are most important adjuvants to the special treatment.

The sudden death of Professor Henry B. Sands, the eminent surgeon, in the prime of his powers, was a great shock, not only to every medical man, but to the entire community here, where he was so widely known and so highly esteemed. On Sunday morning, November 18, Dr. Sands attended service, as usual, at the Broadway Tabernacle, and, after a hearty meal, started out with Dr. H. H. Smith to see a case of hip disease in Jersey City upon which he had operated three weeks before. He was apparently in the best of health, but on his return, while riding up Fifth Avenue in his carriage, with Dr. Smith, he seemed to be seized with a sudden sense of suffocation, and in less than three minutes had died in the latter's arms. In the meanwhile there had gathered at Dr. Sands home, in 33d street, a company of gentlemen, about forty in number, composed of physicians, members of the Sextet Club, of the Philharmonic Society, and other friends, to enjoy a musical afternoon; and their consternation may well be imagined when the carriage arrived with his dead body. It was at first supposed that the cause of death was apoplexy, but the autopsy, conducted by Drs. Delafield and Peabody, showed it to be the result of heart-failure. The funeral services were held at the Broadway Tabernacle, on the 21st, and were attended by the Faculty and students of the College of Physicians and Surgeons, with which he had so long been identified, large delegations from the Academy of Medicine and Medical Society of the County of New York, and a vast concourse of the general public including many of the most prominent citizens. The Rev. Dr. Wm. M. Taylor, pastor of the Tabernacle, pronounced an eulogy, and in the course of it he stated that Dr. Sands had in mind the erection of an operating theatre at Roosevelt Hospital. "Now that he is gone," said Dr. Taylor, "his brotherhood could erect no more fitting monument to the memory of an eminent surgeon than by giving to Roosevelt Hospital the addition suggested." Unlike the majority, perhaps, of the medical men of New York who have attained the highest rank, Dr. Sands was a native of the city, and this community, therefore, has all the greater reason to be proud of his illustrious achievements and to hold his memory dear.

P. B. P.

The American Academy of Medicine.

Dear Sir:—Many members of the profession will be at one with the opinions expressed in the leader in last week's JOURNAL in regard to the American Academy of Medicine. In reading the report of the proceedings of the Academy in THE JOURNAL of Dec. 8, I was struck by several facts. *First*, the tendency on the part of members of that body to self-adulation. *Second*, the paucity of papers in regard to education. *Third*, the over-exclusiveness of the Academy.

I have watched the Academy for several years. My interest in it was first aroused because of its membership being limited to physicians that have taken the A.B. or M.D. degree in course. This, I admit, prejudiced me somewhat against the Academy, since I am so much of a heretic as to believe that a scientific rather than a classical education is the best preliminary to the study of medicine, notwithstanding Dr. George Jackson Fisher's statement that "The Famous Historic Masters of the Healing Art were men of Classical Education." Men of broad, classical and scientific, education have expressed their conviction that a scientific education *is* a better preparation for the study of medicine than a classical education. That a classical education *was* the best preparation a century ago may be a fact; but the argument is as to the present. Modern science is, we may say, but a little more than half a century old, and the conclusions in regard to what was will not hold for what is. Were Michael Faraday alive to-day, and an American physician, he would be ineligible to the Academy. Were Pasteur an American physician he might knock at the doors of the Academy in vain, for he has no classical education. The classical-education ideas of to-day are burying original investigators that might be, and retarding the progress of scientific medicine. To be an investigator—to be a Naturalist—the physician must be a student of nature, and the classical education is a fetter from which one attempts almost in vain to break loose. It drills the young and growing mind to accept as true what is seen in print, and to regard natural laws as analogues of grammatical rules.

We all admit that medicine is founded on scientific facts—not on classical facts nor on classical knowledge. It is idle to argue that a classical—Latin, Greek and mathematical—education is the best for training the mind. One that holds this antiquated opinion shows an unfamiliarity with the laws of the human mind, so far as known, and should study the matter before claiming consideration for his views. The position of the Academy, then, in excluding physicians with scientific degrees, but without the classical A.B. and A.M. degrees, is a false position, and one that must create a large amount of prejudice against the Academy. For example: the writer has the classical A.M. degree, and is eligible to membership in the Academy. He has never asked for admission, however, because he is aware of two facts: 1. There are better educated men, without any classical degree, and with scientific degrees, who cannot be admitted to the Academy. 2. It is a constant source of regret to him that he was forced through the stereotyped classical course, without adequate scientific training, when he felt, long before he studied medicine, that a good scientific course was the proper training for the study of medicine. He is still of the same opinion,

strengthened by experience and a knowledge of his really defective education; and to become a member of the Academy would place him in the position of believing what he does not believe.

One would think that a Society, the purpose of which is to assist in raising the standard of medical education, could employ its time better than in listening to papers on "The Causes and Prevention of the Opium Habit," "The Treatment of Uterine Diseases by other than Surgical Means," etc. The range of subjects connected with medical education, and preliminary education, is surely broad enough to allow the Academy to have an interesting meeting without troubling itself with questions of therapeutics. So far as the medical schools are concerned, there is pressing need for *practical* study, and Dr. Parvin may be congratulated as having read the only paper, at the recent meeting of the Academy, that has a real and logical connection with the subject of higher medical education. A few words in regard to practical surgery, or practical work in the clinics, would have been much more to the point than "A Few Words Concerning the Academy." The relations between scientific training and logical thinking are more to the point than "The Relations between the General Practitioner and the Consultant or Specialist." That there is a field for the Academy there is no doubt; but it seems that it spends too much time outside its legitimate field.

ARTIUM MAGISTER.

BOOK REVIEWS.

A SYNOPSIS OF THE MEDICAL BOTANY OF THE UNITED STATES. By J. M. G. CARTER, M.A., M.D., Ph.D., Sc.D., Member of the American Medical Association; the Illinois State Medical Society; the Chicago Medical Society; the Chicago Academy of Sciences, etc. St. Louis, Mo.: Geo. H. Field, B.S., M.D., Publisher. 1888.

This is a monograph of 176 pages, in good type and paper. It contains a carefully classified list of the plants and shrubs of the United States reputed to contain medicinal properties of some value; and the supposed properties of each are briefly stated. It contains a list of the abbreviations of authors, a table of orders, an index of both generic and common names, and an index of diseases. In the introduction it is stated that the medicinal plants of the United States embrace about 140 orders; 620 genera, and more than 1,300 species and varieties. The author has expended much time and labor in the preparation of this work, and it will be found very convenient and valuable for reference.

A COMPENDIUM OF DENTISTRY for the Use of Students and Practitioners. By JUL. PARREIDT, Dental Surgeon in the Surgical Polyclinic of the University of Leipzig, etc. Authorized Translation by LOUIS OTTOFY, D.D.S., Lecturer on Physiology, Chicago College of Dental Surgery. With Notes and Additions by G. V. BLACK, M.D., D.D.S., Professor of Pathology, Chicago College of Dental Surgery. 8vo, pp. ix-229. With numerous illustrations. Chicago: W. T. Keener. 1889. Price \$2.50.

From the author's preface it appears that he regrets that the general practitioner so much neglects the specialty of dental science. He believes that the practicing physician should be acquainted with the indications for operations on the teeth, and that he should know enough of dentistry to be able to give advice or express an opinion in matters pertaining to the specialty. This book, then, is written in great part for the physician. The translator, as may be seen by comparing the original work and the translation, has done his work well. The notes by Dr. Black form a valuable addition to the work. The book is profusely and well illustrated.

BRYCE'S VISITING LIST AND POCKET RECORD, Good for any Month or Year. Edited and Published by C. A. Bryce, M.D., Richmond, Va. *The Southern Clinic* Print, 1888. Price, \$1.00, postage paid.

This is decidedly one of the most convenient and valuable of the many *Pocket Visiting Lists* to be found in the market.

MISCELLANEOUS.

THE HEALTH DEPARTMENT OF MINNEAPOLIS.—Health Officer Kilvington has directed a letter to the new members of the council, proposing a plan whereby a very material reduction can be made in the expenses of the health department. The annual expense of the department at present is \$19,760, distributed as follows: Health officer, \$2,000; assistant, a medical inspector, \$900; clerk, \$500; 13 ward health inspectors at \$720 each, \$9,360; quarantine physician, \$1,000; city physician, \$1,500; assistant city physician, \$900; police surgeon, \$900; two meat inspectors, \$2,700.

Dr. Kilvington makes several points as follows: That the present force of health inspectors is made up of men untrained and incompetent to perform the work required of them and that a small, but efficient force, can manage the sanitary affairs of the city. The special quarantine physician is absolutely unnecessary. He proposes that the city be divided into five health districts and a man for each district who shall be chosen by competitive examination. At present there are but two city physicians to visit and care for the sick over a territory of 53 square miles, which is a physically impossible task. He calls particular attention to the food inspection, which should embrace all kinds of provisions, but is now confined to the optical inspection only of meats. He would have a force of five nuisance and two inspectors whose duties

would be to inspect all kinds of food stuffs, and the investigation and abatement of nuisances under the control of the board of health. A professional chemist and microscopist should be engaged for the examination of foods and drinking water. Another important provision is that the city scavengers be placed under the control of the board of health, and that body have power to revoke their licenses for non-compliance with the sanitary regulations of the city. The disposition of garbage can be made self-sustaining under such a system. He estimates that the reorganization of the health office can be effected at the following figures: Health officer, \$2,000; five medical inspectors, \$1,000 each, \$5,000; five food and nuisance inspectors, each \$900, \$4,500; chemist, \$600; microscopist, \$600; office clerk, \$500; a total of \$13,200, and a saving to the city as it is now operated of \$6,560.

DISTRIBUTION OF CONSUMPTION IN NEW HAMPSHIRE.—The extent and distribution of consumption in New Hampshire are admirably set forth in a paper by Dr. Irving A. Watson, the Secretary of the Board of Health of that State. The prevalence and fatality of this disease are illustrated by a number of diagrams. From the figures quoted by the author of the paper, it appears that during the three years 1885-87 there were in the State 2,432 deaths from consumption. It is interesting to compare with this the deaths from other forms of disease. From heart disease there were 1,536 deaths; pneumonia, 1,526; apoplexy and paralysis, 1,421; old age, 1,347; cholera infantum, 918; cancer, 637; typhoid fever, 464; diphtheria, 411. From a careful study of consumption in New Hampshire for the past six years, but more especially from the registration returns of the years 1885, 1886, and 1887, the following conclusions are arrived at:

1. The disease prevails in all parts of the State, but is apparently influenced by topographical conditions, being greater at a low elevation with a maximum soil-moisture, than in the higher elevations with a less moist soil. The prevalence of other diseases also affects the death-rate from consumption.

2. That the season has only a small influence upon the mortality from this disease. The popular idea that the fatality is greatest in winter is shown to be erroneous, the greatest number of deaths occurring in May.

3. That the mortality is considerably greater in the female sex.

4. That no age is exempt from this disease, but that the least liability of its development exists between the ages of two and fifteen, and the greatest number between twenty and thirty. Advanced age does not assure any immunity from the disease, as is generally supposed, but the smaller number of decedents is due to the fewer living persons at that advanced period of life.

5. The death-rate from pulmonary consumption is relatively much the larger among the foreign-born.

6. The average death-rate from consumption for the years 1885, 1886, and 1887, is 12.86 per cent. of the total mortality of the State. In Massachusetts, for the ten years ending 1886, deaths from consumption averaged 16.10 per cent. of the total mortality; and in Rhode Island, for a period of twenty-five years, ending 1884, 16.30 per cent. This shows a greater freedom from the disease in New Hampshire than in the two States mentioned.—*Science*.

DISINFECTING LETTERS.—The *American Analyst* describes as follows the method adopted by the United States Government for the disinfection of letters coming from districts in which yellow fever prevails. Letters from the stricken section are fumigated in a novel way, so that there is little or no chance for the disease being brought northward. The letters are all stopped when they reach the quarantine lines. Each letter is put under a machine with a long arm attached, and this is provided with little teeth punctured at the ends. A powder that is used for fumigating purposes is forced through the arm and down

through the teeth. The arm comes down on each letter, and, while the little teeth are perforating the letter, the powder is blown in between the sheets, disinfecting the letter thoroughly. We had understood that after the perforations were made the letters were exposed to the fumes of burning sulphur. If the *Analyst* is correct in its statement, it would be a satisfaction to know what the powder is which disinfects the letters so thoroughly. So far as we know, there is no powder which has this power when applied in the manner described, and, until we receive further information, we shall look upon the whole process with distrust.—*Science*.

IN THE INTEREST OF THE INSANE.—A conference of the managers and superintendents of the New York State lunatic asylums was held at the asylum in Utica on Dec. 7, in response to a call recently issued by President P. V. Rogers, of the Utica board of managers. The conference was intended to promote an interchange of experiences and the discussion of methods best suited to an enlightened administration of the several asylums, and in the belief that such a conference would contribute to the advancement and elevation of the standard of management in each of these State institutions. Superintendent J. B. Andrews, of Buffalo, read a paper on "State vs. County Care," of which the following is an abstract:

Every State should have a definite and settled policy regarding the care of its insane. As early as 1831, before there were any State asylums, a legislative commission recommended the erection of institutions of sufficient dimensions and numbers to accommodate all the insane. The convention of superintendents of the poor in 1855, passed resolutions that the State should care for all of its insane, and that none of them should be treated in county poor houses. Dr. Gray favored this plan. Dr. Willard, in his report for 1865 to the Legislature, of the investigation of the county houses, gave the number of the insane inmates as 1,300. Public sentiment was so aroused that provision was made for the erection of an additional asylum. Other like institutions followed in due time, but they have not kept pace with the increasing amount of lunacy, and there are to-day in the county asylums outside of the municipal institutions of New York city more than 2,500, almost twice the number reported by Dr. Willard in 1865. These figures show how far short we have come of the standard persistently advocated by the various official bodies of the State. Since their organization in 1867, the State Board of Charities has advocated that the State should assume entire care of the insane, and permissions to do otherwise were only intended to be temporary. The doctor gave clearly and at some length various reasons why the insane are better cared for in State institutions than is possible in county institutions. The chronic insane require a supervision and oversight which cannot be extended to them in association with other paupers. The sentiment for the last fifty years expressed by those in positions of authority has favored the policy of State care. There should be some definite policy adopted and carried out by the State. It is able to do it, and it is a duty which in justice it has no right to shirk.

The following resolutions were adopted:

WHEREAS, Unusual and universal interest has been awakened of late in regard to the care and custody of the dependent insane in the State of New York; and

WHEREAS, Such dependent insane have always been regarded as the wards of the State, and

WHEREAS, It would be prejudicial to the true interests of the insane to depart from this humane conception of their rights;

Resolved, (1) That it is the sense of this joint conference of trustees and superintendents of the State asylums for the insane, that the State should have a definite and settled policy with reference to the dependent insane;

2. That such policy should include as its most important and vital principle the care of all its dependent insane in institutions established and controlled by the State.

THE OFFSPRING OF RABID ANIMALS.—Some observations made by Dr. G. Zagari appear to prove that rabies is not, as a general rule at least, communicated by pregnant animals to their offspring. He experimented with guinea-pigs (six), rabbits (five), and once bitch, and tested the virulence in the thirty-two fetuses removed from the body of these animals while suffering from rabies (which generally causes abortion at an early date). In no case was it found to be capable of producing rabies when inoculated; the amniotic fluid, the placenta, the liver, and finally an emulsion made from the whole body of a fetus were found not to be virulent. In like manner, the milk yielded by the bitch and by two rabbits were found not to be virulent. Dr. Zagari (an abstract of whose paper in the *Giorn. int. d. Scienze Med.* is published in the *Cent. f. Klin. Med.*, 1888, No. 48), considers that the negative results of his researches lends support to the theory that the virus of rabies exists in the nervous system and not in the blood.—*British Medical Journal*, Dec. 8, 1888.

DEATH BY A RARE ACCIDENT.—A little son of Dr. Mueller, of Germantown, was remarkably injured by the rib of an umbrella five weeks ago, and died on December 8. The lad at the time was returning from school, and one of the ribs of an umbrella he carried was loose and dangled. While playfully throwing the umbrella up in the air and catching it by the handle as it fell he missed once, and the loose rib ran up his nostril, causing his nose to bleed freely. On the same evening, after supper, he complained of pains in his head and was put to bed by his father. During the night his breathing was unnatural, and when examined by his father he was found to be unconscious. The physician applied all the proper restoratives without effect and, thoroughly alarmed for his boy's safety, summoned several eminent medical men, among them Dr. Agnew. In view of the history of the case the physicians decided that the rib had extended sufficiently far up the nose to penetrate the brain. After he had lain unconscious for several days an operation was performed, which only resulted in temporary relief.

AN EXPERIMENT IN HYDROPHOBIA.—A very interesting experiment is now being performed in New Jersey on a couple of thoroughbred dogs which were bitten by a mad dog in Philadelphia. The animals were bitten first in the morning at 9 o'clock and then again at 6 o'clock. They were badly lacerated on both the neck and legs. It occurred to a Philadelphia physician that it would be an excellent case for experimenting. The two bitten dogs have been placed in a kennel and yard built especially for them, and guarded in every possible manner against escape. They will be fed exactly the same as the other dogs on the farm; in fact, they will be treated in exactly the same manner as though nothing was expected. From day to day they will be visited by expert dog fanciers and physicians and any change will be particularly noted. Provided the dogs do not show any signs of rabies within a period of three months they will be set at liberty, as incubation is supposed to set in within ten days, but by keeping them under strict surveillance for three months a sufficient time will have elapsed for the determination of the experiment.

DIPHTHERIA ON STATEN ISLAND.—An epidemic of diphtheria which broke out some weeks ago in Tottenville, S. I., threatens to assume serious proportions throughout the island. The first case reported was that of the 5-year old child of Benjamin E. Streeter, proprietor of the West End Hotel, who died after a five days' illness. The disease speedily gained ground in the village. Case after case was reported, both among children and adults, and the efforts of the Board of Health to stay the malady have so far been fruitless. Eighteen new cases were reported at the beginning of the week of December 7, and most of the prominent families in the village have some dead ones to mourn. In one family eight children lie

dangerously sick. From Tottenville the disease has spread to Pleasant Plains, Elkinville, Garretsons, Stapleton, Clifton, Tompkinsville and New Brighton. In these places cases are rapidly increasing. The schools are closed, and the churches will also be closed should the disease not abate.

FATIGUE FROM THE USE OF THE TELEPHONE.—At the meeting of the American Otological Society in Washington, Dr. Clarence J. Blake, of Boston, read a paper on the influence of the use of the telephone on hearing-power. He thinks that this influence must be injurious, because the extremely low intensity, as demonstrated by experiment, of the sounds to be caught from the telephone, compelled a strain of the ear which soon fatigued it, and made it especially liable to injury by the accidental sounds of comparatively high intensity which were constantly liable to be heard. Dr. C. H. Burnett said he had seen several patients who believed that the continued use of the telephone had impaired their hearing. Dr. O. D. Pomeroy gave the case of a patient who said the use of the telephone fatigued her very much, and she thought had made her decidedly worse.

A STATE BOARD OF HEALTH FOR GEORGIA.—DR. SIMS, the member of the Legislature from Lincoln, has in course of preparation a bill creating a State Board of Health. The bill will provide for a board consisting of five physicians in good standing, who will have charge of the quarantine regulations of the State, without, however, clashing with the authority of the local boards.

The measure is the result of a general discussion in the Committee on Sanitation and Hygiene, of the recent epidemic in Jacksonville and of the great variety of quarantine regulations in different parts of the State. One result of the creation of a State Board of Health will be to make uniform the quarantine regulations. The friends of the measure believe that the presence of a State Board will do much to allay the excitement incident upon epidemics.

AN ANIMAL HOSPITAL.—The Trustees of the University of Pennsylvania have determined to build a large hospital and stable for the treatment of diseases of dogs, horses, cows, and other domestic animals. There are more fancy cattle owned around Philadelphia, it is said, than about any other city except Boston, and some of the finest die from want of surgical care. A special department is to be devoted to the care of pet and sporting dogs. A well-known Philadelphia lady proposes endowing a department for cats. The Society for the Prevention of Cruelty to Animals and the Anti-Vivisection both oppose the project.

DR. CHARLES B. WRIGHT, a leading physician of Freeport, Ill., died suddenly of heart disease on December 12. He was born in New York in 1820. Besides being a successful physician he was educated for the law, and for five years filled with honor the office of County Judge.

DR. GEO. F. HUNT, of West Bend, Wis., died on Dec. 10. He was graduated from the College of Physicians and Surgeons of New York City in 1856. He was a State Senator in 1881-82.

WOMEN IN THE PROFESSIONS.—According to the Rev. Elizabeth W. Greenwood, there are 2,432 physicians and surgeons, 105 ministers and 75 lawyers in this country who are women.

DR. HOMER O. HITCHCOCK, of Kalamazoo, died on Dec. 8. He was born in 1827. He was graduated from the College of Physicians and Surgeons of New York in 1855.

GIFT TO THE WORCESTER CITY HOSPITAL.—The Armenians of Worcester, Mass., recently made up a purse of \$200 and presented it to the City Hospital.

DR. HENRY LEFFMANN has been elected Pathological Chemist of the Jefferson Medical College Hospital.

DR. JOHN NORTH, of Keokuk, Kansas, will remove to Toledo in a few months.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from December 8, 1888, to December 14, 1888.

By direction of the Secretary of War, Col. Jedediah H. Baxter, Chief Medical Purveyor, will proceed to St. Louis, Mo., and Hot Springs, Ark., on public business connected with the Medical Department, on completion thereof to return to his proper station. Par. 13, S. O. 289, A. G. O., Washington, December 12, 1888.

Major Francis L. Town, Surgeon, is relieved from duty at the post of San Antonio, Tex., and will report in person to the commanding officer Presidio of San Francisco, Cal., for duty at that station, relieving Major Henry R. Tilton, Surgeon, and by letter to the commanding General Dept. of Cal. Par. 19, S. O. 286, A. G. O., Washington, D. C., December 8, 1888.

Major Tilton, upon being relieved by Major Town, will proceed to West Point, N. Y., and report in person to the Superintendent of the U. S. Military Academy for duty at that station, relieving Major Charles F. Heizmann, Surgeon. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Major Heizmann, upon being relieved by Major Tilton, will proceed to San Antonio, Texas, and report in person to the commanding officer of that post for duty, and by letter to the commanding General Dept. of Texas. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Capt. James A. Finley, Asst. Surgeon, is relieved from duty at Ft. Buford, D. T., to take effect upon the expiration of his present sick leave of absence, and will report in person to the commanding officer at Ft. Assiniboine, M. T., for duty at that post. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Capt. Alonzo R. Chapin, Asst. Surgeon U. S. Army, is granted leave of absence for fourteen days, to commence on or about December 24, 1888. Par. 1, S. O. 261, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, December 11, 1888.

Capt. Richard D. Johnson, Asst. Surgeon, is relieved from duty at Ft. Adams, R. I., and will report in person to the Superintendent of the U. S. Military Academy, West Point, N. Y., for temporary duty at that station. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 15, 1888.

Surgeon Thomas N. Penrose, ordered for examination preliminary to promotion.

Medical Inspector A. S. Oberly, ordered before the Retiring Board.

P. A. Surgeon S. H. Dickson, detached from the "Richmond" and to the "Pensacola."

P. A. Surgeon Richard Ashbridge, detached from the "St. Louis" and to the "Richmond."

Asst. Surgeon Ernest W. Auzal, promoted to P. A. Surgeon.

Asst. Surgeon F. W. F. Wieber, promoted to P. A. Surgeon.

CORRIGENDA.

In the report of the discussion of the paper entitled "The Medical-Legal Aspects of some Injuries of the Spinal Cord," the last line, p. 856, should read, "Spinal concussion can be as limited as concussion of the brain is." In the 14th line from top 2d col. p. 856, for "should" read "from." In the 7th line, "or" should follow the word "ataxia," and the sentence close with "perverted sensations." In line 22 is printed "commotio cerebri" instead of "commotio spinalis."

THE
Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. XI.

CHICAGO, DECEMBER 29, 1888.

No. 26.

ORIGINAL ARTICLES.

THE DETERMINATION AND TREATMENT OF HYPERMETROPIA.

Read before the Chicago Ophthalmological Society, on February 14, 1888.

BY W. FRANKLIN COLEMAN, M.D., M.R.C.S., ENG.
PROFESSOR OF OPHTHALMOLOGY AND OTOTOLOGY, POST-GRADUATE MEDICAL SCHOOL OF CHICAGO.

Though I have nothing novel or startling to announce, still, for the sake of discussion of a vexed question, I introduce this subject. How close and general that classical writer, Donders, considers the relation of asthenopia to hyperopia is evident from the following: "It is a great satisfaction to be able to say that asthenopia need now no longer be an inconvenience to any one. The discovery of the simple fact that asthenopia is dependent on the hypermetropic structure of the eye pointed out the way in which it was to be obviated. Could it be otherwise than that, with the correction of the hypermetropia by means of convex glasses, its resulting asthenopia must also disappear?"

While this grand discovery of hyperopia and its correction by Donders has, perhaps more than aught else, accomplished much for the relief of eye-strain, yet we do not find in the correction of hyperopia such a universal panacea as the above would indicate—for asthenopia may occur with any or no error of refraction, and require quite other treatment than convex glasses. However, hyperopia is so prevalent a source of weak sight that no one will question the importance of its accurate determination as a guide to treatment.

There are three questions I wish particularly to introduce and would like to have especially discussed:

1. Is it necessary to paralyze the accommodation in order to prescribe the most suitable glasses?
2. Can the accommodation be completely paralyzed by homatropine?
3. How much of the hyperopia should be corrected with glasses?

My answer to the first question would be, yes; to the second, I think not; to the third, from .5 to 1 D. less than the total if the glasses are to be worn constantly, and the total if they are to be worn for near vision only.

The first question, judging from my own experience, needs little discussion. He, however skilful, who prescribes glasses for hypermetropia by the aid of the ophthalmoscope and test glasses without paralyzing the accommodation will, in my opinion, make many serious mistakes. My impression is most oculists entertain the same view. On the other hand, such men as Hasket Derby, Strawbridge, etc., are (to my knowledge) in the habit of testing and of prescribing with the accommodation active.

Donders says it is seldom necessary to employ mydriatics for the determination of hypermetropia, but it is justifiable for the more accurate study of the connection between manifest and latent hypermetropia. Juler writes: "From the age of 20 to 30 a mydriatic can often be dispensed with—after the age of 30 mydriatics are seldom necessary."

In answer to our second question it may be said many oculists (among them Drs. Agnew and Webster), have given up the use of homatropine, deeming it insufficient for complete paralysis, and have returned to the use of atropine. On the contrary, members of this Society express themselves as satisfied with the use of homatropine in prescribing glasses. Dr. Gradle told us that, after a series of experiments, he concluded complete paralysis could be produced with homatropine.

To the same conclusion has Dr. C. A. Oliver (Philadelphia) come after extended experiments. He says: "The utmost loss of accommodation occasioned by the single instillation of $\frac{1}{20}$ gr. of homatropine takes place in thirty-two minutes, and if, at the time of the utmost action of $\frac{1}{20}$ gr., the $\frac{1}{20}$ gr. was instilled, complete paralysis was established in fifty-four minutes, and remained stationary more than thirty minutes. This allows of the accurate testing of ametropia."

Juler, in mentioning the above results, does not give the method of Dr. Oliver's experiments, so we are not aware whether, after homatropine, atropine was used as a test of complete paralysis, or upon what grounds Dr. Oliver bases his con-

¹ Since writing the above Dr. Oliver has kindly favored me with a letter stating the conditions of his experimental work with homatropine. Ten young eyes were selected, "one of which was emmetropic, and the remaining nine most carefully and recently corrected by atropia, and thus, as it were, in a quiet emmetropic state. This fact renders the exact experimental and the ordinary clinical results far different. No one has been more fully aware . . . that homatropine cannot be made to supplement in any way the use of atropia in the proper correction of errors of refraction than myself."

clusions. I have found in several instances the glasses prescribed under homatropine as commonly used, viz.: grs. viij aq. $\bar{3}j$ instilled three to four times in an hour before testing, unsatisfactory, and have obtained a greater degree of ametropia, and more satisfactory results, with atropine, so that I have come to distrust the finding with homatropine and, when possible, substitute atropine.

Dr. Hotz uses in testing a 4 per cent. solution of homatropine, with which he expresses himself satisfied. One minim of this solution instilled twice in one half hour will, according to Dr. Oliver, produce complete paralysis of accommodation in fifty-four minutes. Yet I have frequently used a 4 per cent. solution of homatropine from twice to four times in an hour, and by the subsequent use of atropine determined accommodation had not been completely abolished, for a greater degree of hyperopia appeared under the latter.

To return to our question: Is it necessary to paralyze the accommodation in order to prescribe the most suitable glasses? Formerly my practice was to test and prescribe with the accommodation active, since this is the condition of near vision. With greater experience the result of such a practice has been frequently observed to be unfavorable, and for some time past I have, as a rule, used atropine. Out of many cases which might be cited, two will be sufficient to illustrate the discrepancy between the results of testing with and without accommodation:

1. C. H. H., æt. 11, has had symptoms of asthenopia for one year. With accommodation active, R. V. + 60 C., $90^\circ = \frac{2}{3}^\circ$; L. V. + 60 C., $90^\circ = \frac{2}{3}^\circ$. Under atropine, R. V. + 16 = $\frac{2}{3}^\circ$; L. V. + 16 = $\frac{2}{3}^\circ$. Glasses + 20 gave perfect relief.

2. Mrs. Hart, æt. 26; asthenopic. With active accommodation, R. E. + 42, V. = $\frac{2}{3}^\circ$; L. E. + 36, V. = $\frac{2}{3}^\circ$. Under atropine, R. E. + 30 + 60 C., 105° V. = $\frac{2}{3}^\circ$; L. E. + 20 + 60 C., 90° V. = $\frac{2}{3}^\circ$. These latter glasses afforded perfect relief after the former had been tried and failed.

To revert next to our second question: "Can the accommodation be completely paralyzed by homatropine?" Tweedy found (*Lancet*, 1880) a solution of homatropine (grs. iv. aq. $\bar{3}j$) produce total paralysis of accommodation. Schell (*Specialist and Intellig.*, Philadelphia, 1883) says a 3 per cent. solution produces paralysis of accommodation in half an hour.

I will cite the following sixteen cases tested by myself, first with homatropine grs. viij to grs. xx in aq. $\bar{3}j$, and subsequently with atropine, grs. iv aq. $\bar{3}j$., in proof that the former does not produce complete paralysis, and does not furnish reliable indications for prescribing.

Case 1.—Miss G., æt. 16. The right eye, under homatropine grs. viij aq. $\bar{3}j$, accepts — 36 C. 180° (1); under grs. xx aq. $\bar{3}j$ + 36 C. $90^\circ = 72$ (2); under atropine grs. iv aq. $\bar{3}j$ + 36 C. 90° (3). The 4 per cent. solution of homatropine was ap-

plied twice in half an hour. The atropine was applied five times during two days. By comparison we notice the 4 per cent. solution of homatropine released .5 D. more of the accom. than the 1.7 per cent., and the atropine released .5 D. more than the 4 per cent. of homatropine +. That is, $(1) + 72 = (2)$; $(2) + 72 = (3)$.

Case 2.—Mrs. H., æt. 26. Complaints of asthenopia and nictitation for years. Has given up reading during the past year, as any attempt would cause headache. Homatropine grs. viij aq. $\bar{3}j$ four times in one hour. R. E. + 30 = $\frac{2}{3}^\circ$; L. E. + 20 = $\frac{2}{3}^\circ$. Glasses + 36 afforded relief for a time. Seven months later Mrs. H. reports any use of her eyes causes redness and smarting. After atropine grs. iv aq. $\bar{3}j$ t. d. for three days, R. E. + 30 + 60 C. $105^\circ = \frac{2}{3}^\circ$; L. E. + 20 + 60 C. $90^\circ = \frac{2}{3}^\circ$. These glasses gave perfect comfort in reading.

Case 3.—J. T., æt. 10 years. Homatropine grs. viij aq. $\bar{3}j$ was applied four times in twenty-four hours, and then four times in one hour, and the refraction tested. The R. E. accepts + 8 C. 105° ; the L. E. + 10 C. 75° . A subsequent testing, under atropine three days, gave for the R. E. + 7 C. 105° , and the L. E. + 7 C. $70^\circ + 60$.

Case 4.—M. T., æt. 26. Homatropine (grs. viij) ten times during three hours. R. E. + .75 D. + 1 D. 60° ; L. E. + 1.25 D. + 1 D. 120° . After atropine (grs. iv) six times in twenty-four hours, R. E. + 1 D. + 1 D. 60° ; L. E. + 1.25 D. + 1 D. 120° .

Case 5.—C. N. Homatropine (grs. viij), ten times in one hour. R. E. + .5 D. V. = $\frac{2}{3}^\circ$. Thirty-five minutes after atropine (grs. iv), was once applied, R. E. + 1 D. V. = $\frac{2}{3}^\circ$.

Case 6.—E. H., æt. 12. The R. E., under homatropine, shows H. = $\frac{1}{3}^\circ$; under atropine $\frac{1}{5}^\circ$. The L. E. under the former $\frac{1}{3}^\circ$, the latter $\frac{1}{4}^\circ$. The homatropine was used (grs. viij) four times in an hour, the atropine three times in twenty-four hours.

Case 7.—Dr. X. tested Dr. Y. after using homatropine (grs. viij) three times in half an hour, and prescribed R. E. + .75 D. 55° ; L. E. + 1 D. These glasses were unsatisfactory. Dr. X. again tested with homatropine and prescribed R. E. + .75 D. + .75 D. 55° ; L. E. + .75 D. + .75 D. 100° . These glasses gave more but imperfect relief. I found, after atropine three times a day during three days, R. E. + .75 D. + 6 D. 75° , V. = $\frac{2}{3}^\circ$; L. E. + 1 D. + 1 D. 90° , V. = $\frac{2}{3}^\circ$. After using these glasses for months Dr. Y. says he can read for two or three hours without any inconvenience.

In the following cases a 4 per cent. solution of homatropine was used, followed by atropine (grs. iv aq. $\bar{3}j$).

Case 1.—Miss F., æt. 25. Homatropine three times in one hour. R. E. accepts + 72 + 60 C. 90° ; L. E. accepts + 72 + 48 C. 90° . After at-

ropine t. i. d. for three days R. E. accepts + 48 + 60 C. 90°; L. E. accepts + 48 + 36 C. 90°.

Case 2.—Mrs. H., æt. 28. Homatropine four times in two and one half hours. R. or L. V. + 60 = $\frac{2}{3}$. Atropine t. i. d. for two days, R. V. + 48 = $\frac{2}{3}$; L. V. + 30 = $\frac{2}{3}$.

Case 3.—A. B., æt. 12. Homatropine four times in two hours. R. V. + 24 C. 90° = $\frac{2}{3}$; L. V. + 24 C. 90° = $\frac{2}{3}$. Atropine t. i. d. for four days. R. V. + 24 + 36 C. 90° = $\frac{2}{3}$; L. V. + 36 + 30 C. 90° = $\frac{2}{3}$.

Case 4.—R. A., æt. 9. Homatropine three times in one hour and 20 minutes. R. V. + 1.25 D. = $\frac{6}{8}$; L. V. + 1.50 D. = $\frac{6}{8}$. Atropine t. i. d. for three days. R. V. + 1.25 D. = $\frac{6}{8}$; L. V. + 2 D. = $\frac{6}{8}$.

Case 5.—J. B., æt. 13. Homatropine applied four times in an hour, and eyes examined twenty minutes later. R. V. + 16 + 36 C. 120° = $\frac{3}{4}$. L. V. + 30 = $\frac{2}{3}$. Atropine t. i. d. for three days. R. V. + 12 = $\frac{2}{3}$. L. V. + 18 = $\frac{2}{3}$.

Case 6.—Mrs. H., æt. 25. Homatropine three times in one hour. R. V. + 60 C. 90° = $\frac{2}{3}$. L. V. + 72 = $\frac{2}{3}$. Atropine t. i. d. for three days. R. V. + 60 + 60 C. 90° = $\frac{2}{3}$. L. V. + 36 = $\frac{2}{3}$.

Case 7.—M. T., æt. 10 years. Had been examined under a mydriatic seven months previously by an oculist, who prescribed glasses + 15 for constant use. These were fairly satisfactory for five months, but during the past two months the letters would blur and head ache in ten minutes' reading. Under homatropine four times in an hour and a half R. V. + 42 = $\frac{2}{3}$. L. V. + 36 = $\frac{2}{3}$. Under atropine t. i. d. for three days R. or L. V. + 36 = $\frac{2}{3}$. At 20' adduct. = 8°, abd. = 6°: V. d. = equilibrium. With accom. R. or L. V. + 36 = $\frac{2}{3}$ +. These glasses gave perfect comfort and were prescribed for constant use.

Case 8.—A. H., æt. 16. Convergent strabismus and choroiditis disseminata. After homatropine four times in one hour R. V. + 9 = $\frac{2}{3}$. L. V. + 9 = $\frac{2}{3}$. After atropine instilled t. i. d. for three days R. V. + 8 = $\frac{2}{3}$, L. V. + 8 = $\frac{2}{3}$.

Case 9.—S. E. A., æt. 12 years. With homatropine four times in two hours R. or L. V. + 36 = $\frac{2}{3}$. With atropine t. i. d. for three days, R. or L. V. + 24 = $\frac{2}{3}$.

An analysis of the first seven cases in which homatropine grs. viij aq. ʒj was used followed by atropine grs. iv aq. ʒj, demonstrates, in case 4, .25 D. more hyperopia under the latter. Cases 1, 5, 6, .5 D. more hyperopia. Case 2, an astigmatism of .6 D. in each eye was developed. Case 3 shows an added .6 D. ast. in R. eye and 2 D. ast. + .6 D. hyperopia in L. E. Case 7 shows a change of 20° in the axis of the cyl. in R. E., and an increase of H. 25 D. + ast. .25 D. with axis of cylinder changed 10°.

To summarize the last nine cases. There was developed under atropine an increase of hyperopia, as compared with the findings under homatropine,

as follows: In two eyes .15 D.; in two .25 D.; in four .5 D.; in one .6 D.; in three .75 D.; in one 1 D.; in one 1.5 D. In one eye + 1 D. astigmatism disappeared. In one there was .25 D. more astigmatism; in one .33 D. less; in one .5 D. less. In two eyes the refraction remained the same under atropine.

3. How much of the hyperopia should be corrected? As to this question the answer exhibits a befoggling diversity of opinion. Donders says: "In very young persons in whom we may expect much latent hypermetropia, and in those who are somewhat more advanced, for example, at 30 years of age, where the range of accommodation has undergone much diminution, glasses which correct only the manifest hypermetropia are scarcely ever sufficient." Again, "If we know Hm. and Hl. we give glasses which neutralize the manifest; and about one-fourth of the latent hypermetropia, in general they will answer the purpose, either immediately or after a few weeks." In their systematic works Carter, Wells, Schweigger and Williams give practically the above formula of Donders for prescribing glasses. Mittendorf, Wolf and Nettleship say, give full correction in children, while Roosa advises less than full correction, especially in young people. DeWecker advises a correction of less than Hm. in children with high hypermetropia. Landolt, in his splendid recent work, directs glasses for hyperopia of a strength inversely to the range of accommodation. Noyes' rule is full correction if the total H. = $\frac{1}{12}$ or more, and correction of the manifest H. only if the total = $\frac{1}{6}$ or less. DeWecker and Nettleship correct only Hm. in adults. Wolfe (Glasgow) and Lang (London) give full correction, as a rule, and G. T. Stevens recommends it. Juler writes, "Deduct half a diopter from the Ht. when the glasses are to be worn constantly, and give full correction when they are to be worn for near vision." This, in my judgment, is the best rule, of any quoted, to follow. Instead of adopting any method based upon the age of the patient, or the degree of the hyperopia, it is much more simple to include all cases in one formula, as does Landolt, who considers the static and dynamic (accommodation) refraction as one whole, and says, "The convex glasses ought to correct the whole of the refractive defect and disengage a certain quota of accommodation, which will help the person to keep up his ocular work the desired length of time." This "quota" Landolt considers from $\frac{1}{4}$ to $\frac{3}{4}$. In other words, he thinks $\frac{2}{3}$ to $\frac{3}{4}$ of the total power of accommodation can be comfortably used for continuous work. Then his rule in practice amounts to this: Allow $\frac{2}{3}$ to $\frac{3}{4}$ of the accommodation to be used towards the correction of the static refraction and make up the deficit by adding a convex glass. To take one of his examples: Suppose a hyperope of 7 D. has accommodation of 9 D.; with what glass will he

most conveniently work at 3 D.? In order to see at 3 D. a hyperope of 7 D. requires 10 D. of refraction. For this he requires a glass of 4 D.; the 6 D. ($\frac{2}{3}$ of 9 D.) of accommodation allowed, making up the deficit (in total 10 D.).

In designating the law of Landolt for prescribing glasses as the "most simple," I did not intend to subscribe to it, and in practice do not. Clinical experience will, I think, furnish abundant evidence that $\frac{2}{3}$ to $\frac{3}{4}$ of the accommodation *cannot* be used without asthenopic symptoms resulting. Otherwise very few hyperopes would suffer from asthenopia—as can be easily illustrated from Landolt's own table of "amplitude of accommodation." His table gives 14 D. to 7 D. of accommodation from the age of 10 years to 30. From the above it follows the eye could use 9.33 D. to 4.66 D. ($\frac{2}{3}$ of 14 D. to 7 D.) of accommodation for continued effort (Landolt). Consequently, for reading at 12 in. (3 D.) there would be 6.33 D. to 1.66 D. (9.33 D.—3 D. to 4.66 D.—3 D.) of accommodation, which could be utilized (without asthenopia) to correct hyperopia.

This, I think, does protest too much, for we cannot believe that between the ages of 10 and 30 a hyperopia of 6.33 D. to 1.66 D. may exist, with the rarest exception, without symptoms of asthenopia.

Again, to compare the emmetrope with the hyperope, say at the age of 20 years: Suppose each has 9 D. of accommodation; the emmetrope reads at $\frac{1}{3}$ meter with 3 D. of accommodation ($\frac{1}{3}$ of his total), while a hypermetrope of 3 D. would be compelled to use at the same distance ($\frac{1}{3}$ meter) 6 D. of accommodation (*i. e.*, $\frac{2}{3}$ of his total). My contention is, the 3 D. (total) of hyperopia should be corrected with a glass of 3 D., to make the eye equal to the emmetrope in refraction. I do not forget Donders' objection to the above, that the patient cannot at once (with full correction) relax the total amount of accommodation, and therefore accommodates (with the glass) for too near a point, and accommodative is changed into muscular asthenopia. But we know that Donders himself recommended, and now the majority of oculists prescribe glasses stronger than the manifest hyperopia, and that the eye soon adapts itself to these glasses which are changed from time to time for stronger. The principle remains the same if full correction is given at once, *i. e.*, gradual relaxation of the latent spasm of accommodation. Since there are many persons who cannot, or will not, consult an oculist a second time, much less a third or fourth, in regard to changing their glasses, I think it is best to give full correction and direct them to use the glasses by graduated exercise, and to hold the book 15 inches distant, assuring them the eyes will in time adapt themselves to the glasses, which will then not require to be changed until the age of presbyopia. If without putting the accommodation

at rest, we prescribe glasses, or if we atropinize the eyes and give only partial correction, it may happen (however admirable our intention) we will benefit the patient not more or less than might the happy-go-lucky testing of the average optician (whose exclusive prerogative, the public think, it is to fit glasses); the jeweler who displays (with other precious stones) pebbles which he can especially recommend as most cooling to the eyes, or the general merchant at the cross-roads, who is compelled to furnish all sorts of hardware.

I will report only two cases as examples of the result of total correction:

S. E. A., æt. 12. Can read only five to ten minutes without headache and other symptoms of asthenopia. Under atropine (grs. iv ad. $\bar{5}$ j) t.i.d. for three days. R. or L. V. +24 = $\frac{2}{3}$. Sps. +24 prescribed, with which he reads by the hour comfortably.

Daisy B., æt. 10. During the past six months only very large type could be read, and even it tired the eyes very much in a very short time. After atropine t.i.d. for three days the R. E. accepted +4 D. +.75 D. 90°; the L. E. +4 D. +3 D. 90°. With these glasses there has been (during a three months' trial) no inconvenience in reading.

The favorable results of treating the majority of asthenopes by the correction of their hyperopia with convex glasses are too familiar to make the citation of their cases of any special interest.

A few cases will be reported in which muscular insufficiency being present, the symptoms did not yield simply to the correction of the refraction.

The subject of muscular anomalies and their treatment is too large to fully consider in this paper. I am convinced we too often neglect to test the ocular muscles in examining asthenopic patients, and thereby fail in many cases to relieve.

Miss McG., æt. 37. Seamstress. Complains of pain in the eyes during the past year whenever she read or sewed, and she has suffered a good deal from headache. With accommodation. R. V. = $\frac{2}{3}$ = 5 J. 12" + 36 C. 90° = $\frac{2}{3}$; +24 + 36 C. 90° = 1 J. 10". L. V. = $\frac{2}{3}$ = 3 J. 12" + 42 = $\frac{2}{3}$; +18 = 1 J. 10". At 21' adduct. = 10°; abd. = 6° at 12" add. = 14°; abd. = 10°; V. d. = 4°. Converge. Under homatropine, grs. viij ad. $\bar{5}$ j. R. V. +36 + 36 C. 90° = $\frac{2}{3}$; L. V. +24 = $\frac{2}{3}$. Glasses were prescribed. R. E. +24 + 36 C. 90° \odot prism 2° base in. L. E. +18 \odot prism 2° base in. Ten months later Miss McG. reports she is much relieved, being able to sew all day, with glasses, but cannot read in addition. When in good condition the eyes feel pretty well, but at times they pain and smart.

I regret not having used atropine, instead of homatropine, since Miss McG. will not now take time for examination with atropine, and is imperfectly relieved.

Pain in the eyes and head relieved by sphero-

abducting prisms for near vision, and sphero-abducting prisms for distant vision.

Mrs. E., æt. 32. Is neurotic, and of a neurotic family. Has suffered from asthenopia for 12 years. During the past year she has used her eyes only to write and read letters and read familiar music. Has a dull pain in the eyes and head much of the time. For two years (excepting two weeks) has used homatropine (grs. ij ad. ʒj) every evening. Without it the eyes ached constantly. With it, and the avoidance of fatigue, the eyes were pretty comfortable. Six years ago an oculist prescribed—under atropin—a sphero. cyl. glass for each eye. It is doubtful whether they gave relief at first. At the end of a year the eyes were worse. Five years since another skillful oculist examined the eyes—with active accommodation—and gave +60 for each eye. He directed exercise of ocular muscles, by converging for a near point. This gave pain and did not benefit. With the + 60 glasses she can read only ten minutes. The strength of the recti had not been tested. With active accommodation I find the R. E. + 72. V. = $\frac{20}{0}$; L. E. V. = $\frac{20}{0}$. Refuses a glass. At 20' add. = 24°; abd. = 2°; V. d. = equilibrium 12" With atropine vertical diplopia with prism shows R. E. + 36. V. = $\frac{20}{0}$; L. E. + 6° divergence. 36 C. 90°. V. = $\frac{20}{0}$ at 20' add. = 24°; abd. = 3°; V. d. = equilibrium with sps.. Glasses were prescribed, to be worn for distance. R. E. + 36 \bigcirc prism 2° base out; L. E. 36 C. 90 = \bigcirc prism 2° base out; for reading R. E. + 36 \bigcirc prism 2° base in; L. E. + 36 C. 90° \bigcirc prism 2° base in. Galvanism had been applied to the eyes, but it caused pain and was given up. It had been tried previously, at home, and always caused pain in the head and eyes. Mrs. E. returned in six weeks and stated she had given up the use of homatropin, had worn the glasses for distance and reading, and when she felt well could read three to four hours a day. She had had no pain in the eyes and little in the head. At 20' add. = 26°; abd. = 5°. V. d. = equilibrium. Advised to use gymnastic prisms five minutes once a day. Three months later Dr. E. wrote: "Mrs. E. saw Dr. Moore before she left New York. He was convinced convergence was so excessive as to give occasional strabismus, although at 20' the Graefe test gave equilibrium. He advised tenotomy—full. The result has been very great improvement, and from her increased ability to use her eyes and her absence of headache, I think and hope it will be a cure.

The above result of tenotomy is very interesting and satisfactory. It demonstrates (as Dr. Noyes has pointed out) that the muscular findings by distant testing, are a much more reliable guide to treatment than the findings for the near point. I cannot say whether the gymnastic prisms were used by which means the real relative strength of the external and int. recti would have

been more evident when Dr. Moore tested. Upon referring to my first testing it is noticed that at 20 feet there is facultative divergence of only 2° with dynamic equilibrium, while with the Graefe dot and line test at 12 in. there is dynamic divergence of 6°. Subsequently (3d testing) at 20 feet prism of abduction equal to 5° while ad. = 26°.

Miss M. S., æt. 15 years, an undeveloped delicate girl, who for years had suffered constantly from headache and pain in the eyes. The family physician had been able to give but little relief, so sent the patient to me to have her eyes examined. Miss S. says any attempt to read produces pain in the eyes and brows, flowing of tears and blurring of the type in a few minutes. R. E. V. = $\frac{20}{0}$ = 1 J. 12" + 48 = $\frac{20}{0}$ L. E. V. = $\frac{20}{0}$ = 1 J. 12" refuses glass. At 6 feet Ad. = 13°: Ab. = 10°: Vd. = Div. 8°. Under atropine R. E. + 36 C. 90° V. = $\frac{20}{0}$: L. E. + 30 C. 90° V. = $\frac{20}{0}$. Upon fixation within 12 in. with either eye the fellow eye diverges. Advised arsenic and fat food. After application of galvanism daily for two weeks, the eyes were less sensitive to pressure but the pain was not relieved.

A second testing under atropine gives R. V. + 48 = $\frac{20}{0}$: L. V. + 48 = $\frac{20}{0}$. With accom. R. or L. eye accepts + 48. Directed to wear constantly for distance + 48 \bigcirc prism 2° base out (each eye). Read with these glasses and with + 36 on alternate days. Commencing with five minutes three times a day, and increase the time one minute daily. Three weeks later, Miss S. can read twenty-seven minutes comfortably with either pair of glasses. Directed now to try the sphero-prisms with *base in* alternately with + 36 and continue to increase the reading time as before.

After six weeks, Miss S. reports she has reached 54 minutes with comfort, and reads equally well with either pair of specs. The headache is unrelieved. At 20' ad. = 24°: Ab. = 6°: V. D. = *Conv.*

Spheroadducting prisms (+ 48 \bigcirc 2°) were given for distance and sphero, abducting (+ 48 \bigcirc 2°) for reading, and prisms 6°, 8°, 10° and 12° to be used once daily for five minutes, with the light (as object) at 20 feet. Miss S. returned in six months. Says she can read as long as she wishes now without any inconvenience, and the headache is very much less. Her eyes now accept as the best reading glasses, R. or L. + 72 + 60 C. 90° \bigcirc prism 2°, base in. The adducting prisms for distance cause headache and are discontinued.

Mrs. S. reports seven months later that her daughter is from home at school, has no trouble in using her eyes for her studies, and rarely suffers from headache.

The good result in this case I attribute to graduated exercise in reading and to the use of gymnastic prisms. Since spherical glasses, sphero-adducting or sphero-abducting prisms could be

worn equally well it is not likely the prisms afforded much relief in reading.

Spasm of accommodation and asthenopia in a patient with total hyperopia = $\frac{1}{16}$, relieved only after the use of atropine for nine and a-half months.

M. B., æt. 9 years, since commencing to attend school at the age of six, has held her book very near, and now reads habitually at four inches. The reading of two or three sentences produces pain in the eyes, brows and jaws.

With accommodation R. V. = $\frac{2}{30}$ = 1 J. 4 to 12 in. + 48 = $\frac{2}{30}$ L. V. = $\frac{2}{40}$ 1 J. 4 to 7 in. + 60 C. 90° = $\frac{2}{30}$. After atropine t.i.d. for three days, R. E. + 20, V. = $\frac{2}{30}$, L. E. + 24, V. = $\frac{2}{30}$. R. specs + 36 for reading. Two weeks later can read two pages before eyes tire. R. + 24, specs to be worn constantly. Four and a-half months subsequently Maud reports there has been no trouble in reading at 15 inches, and she liked the glasses for distance as she could see farther and had no headache, but for two weeks past the eyes have again troubled her in reading. There is again spasm of accommodation. R. Repeat atropine t.i.d. Two weeks later total H = $\frac{1}{16}$ R. or L., R. atropine once daily. Four and a-half months, later the atropine had been discontinued for weeks and reading could be done comfortably without glasses. Advised to continue the use of glasses to prevent relapse.

I think the moderate continued exercise of the internal recti by the wearing of abducting prisms for distance, is much more effectual than electricity, or than the spasmodic gymnastic use of prisms, in relieving muscular insufficiency. Galvanism I have found lessens very much the pain and tenderness of the eyes which accompany asthenopia, but electricity has appeared to me to accomplish little in strengthening ocular muscles.

Gradually increasing exercise of the eyes seems to be as much indicated in asthenopic hyperopes who are not relieved at once with glasses as in emmetropes with weak sight, for whom Dr. Dyer used it with such signal success.

163 State Street.

HEPATIC INCOMPETENCE IN CHILDREN.

Read in the Section on Diseases of Children, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1883.

BY M. P. HATFIELD, M.D.,

PROFESSOR OF DISEASES OF CHILDREN IN CHICAGO MEDICAL COLLEGE.

A type of patient, very familiar to the physician interested in pædiatrics, is the well-known, sallow, neurotic anorexic child, the torment of herself, parents and the physician. She—for it is more frequently a she than a he—is as a rule dyspeptic, constipated, generally disordered in secretion and yet without demonstrable lesions.

What ails these children? If there happens to be a feverish exacerbation during the day, malaria is usually charged with their infirmities, but quinine aggravates their troubles instead of removing them. Gastric catarrh and the so-called bilious attacks are met with in a certain proportion of these cases but by no means in all; nor does the treatment of the gastric catarrh alone cure these children. General tonics, especially the feruginous, make matters worse, and the most careful physical examination fails to reveal anything except in a very few cases where moderate tenderness and enlargement of the liver may be detected. Beyond dispute these children are not well, but there is no word that will explain their condition, unless we fall back on that much abused term "biliousness." But bilious they are not, in the sense that there is an excess of bile, or its reabsorption to any considerable degree—although there may be sallowness, furred tongue, and stools inclined to a clay color.

Other of their symptoms may be found in Murchison's description of lithæmia, but this is partial and only embraces those cases in which there is a copious deposit of uric acid or the urates in the urine, due to imperfect formation of urea.

Hepatic incompetence is a better term, for it includes not only imperfect nitrogenous transformation, but all other deficiency in the work of the liver. The name has been adopted in regard to the work of the kidneys, and something of the kind is needed to scientifically group together not a few of the morbid conditions of early childhood very unlike in their clinical manifestations, and yet in the writer's opinion, all due to imperfect work on the part of the liver.

Etiology.—In these days of bacteriological laboratories and microbes many and various, it takes some moral courage to insist that there is such an old fashioned organ as the liver and that it may become functionally deranged without the provocation of any bacillus. Such I believe is frequently the case in children with whom organic diseases of the liver are rare, but functional exceedingly common. These functional disturbances may be conveniently grouped into three divisions: Icteric (bilious), lithic, and toxic, according to the prominence of certain groups of symptoms, corresponding to the interference with the three more important functions of the liver. Very likely there are other and fully as important ones not yet recognized, for the general knowledge of the profession in regard to that much abused organ is hardly better than that of Hippocrates, who steadfastly believed that the liver was the home of the emotions, and that a man became melancholy, or choleric, according as it formed an excess of various kinds of bile. The chemistry of the bile and its action upon digestion have been carefully studied upon the lower animals, but there is yet a woeful lack of knowledge as to the

origin of the various bile salts and pigments, and much dispute as to the part they play in the human economy. The bile pigments, in all probability, are derived from the hæmoglobin of the blood and possess decidedly antiseptic properties—as proven by the intestinal fermentation which occurs when they fail to pass into the alimentary canal. Such intestinal disturbance, clayey stools, disordered peristalsis and greater or less degree of icterics constitute the group of symptoms to which belongs the term *icteric*, or bilious in common parlance, arising from this form of hepatic incompetence.

The second, or lithic, group of symptoms, are those so well described by other writers under the head of lithæmia, that they need no repetition here except to mention that here belong all symptoms referable to the liver's failure to transform albumenoids into (soluble) urea. They are the clinking of the body's furnace with uric acid and urates with the accompanying gastro-intestinal, renal and cystic disturbances.

Lastly and by no means least in importance are the toxic or toxæmic symptoms due to the failure of the liver to destroy the toxic substances normally formed within the body. This function of the liver—although it might have been inferred from previous experience in toxicology—seems to have escaped the attention of all experimenters previous to Schiff and Lauterbach, of Geneva (1877). They clearly demonstrated that the liver possesses anti-toxic actions, and if the blood is prevented from passing through the liver it acquires toxic properties not unlike those possessed by conia and allied vegetable alkaloids. Later investigators, notably Gauthier, have shown that these poisonous alkaloids are produced by the retrograde metamorphosis of the tissues of the body during life. To distinguish them from the cadaveric alkaloids (ptomaines) they have been named leucomaines, and this sort of hepatic incompetence should be known as leucomaine poisoning, or intoxication; for these leucomaines are toxic, producing death when hypodermically injected into the lower animals. The symptoms produced thereby, so closely resemble the ordinary manifestations of malaria that we are constrained to believe that much of what passes under the name of "dumb ague" is not malarial at all in its origin but is dependent upon the accumulation within the system of these products of decomposition. It is, in short, a variety of septic poisoning, arising from hepatic incompetence, and any form of treatment which fails to take these into account will in so far be found unsatisfactory and disappointing.

Differentiation.—The differential diagnosis of these cases is not difficult if we can but succeed in freeing our minds from the wide-spread belief that hepatic incompetence cannot exist without clayey, or light colored stools. As has already

been said, they may, or may not be present, for certain forms of hepatic incompetence may exist with normally colored feces and, *per contra*, the liver may efficiently perform its work even with a clay colored stool, due to other causes than hepatic incompetence. Neither does hepatic incompetence require that the liver should be congested and tender, though beyond disputed chronic congestion of the liver eventually leads to incompetence by fibroid contraction and degeneration of its atrophied cells. Nor, again, is it always true that an apparently enlarged liver will produce incompetence, for as Eustace Smith has shown: "the liver is apt to vary in size from natural causes in young children; some having exceptionally short chests which cause the liver, without enlargement, to be displaced a finger's breadth or so below the ribs." Bearing, however, these sources of error in mind, the diagnosis of hepatic incompetency ought to be neither difficult nor uncertain, whether it be attended with the distressing vomiting and purging of a bilious attack or the chronic headache and feverish exacerbations of slow leucomaine poisoning.

Prognosis depends upon the amount of the hepatic incompetence. If complete, as in acute yellow atrophy, or phosphorus poisoning, the result is inevitably fatal. As it is usually met with, the prognosis is excellent both as regards the life of the patient and restoration to health.

Treatment should be both medicinal and dietetic, largely the latter. Many of these cases originate in errors of diet, and cannot be cured except by a correction of the same. Excess of albuminous and stimulating foods and such, is almost universal with the American child, or leads to engorgement of the hepatic veins and of the liver cells in their immediate vicinity, with subsequent atrophy of same according to Eustace Smith. Such cases cannot be cured except by a careful regulation of diet before hepatic incompetence becomes chronic. Starchy foods, fruits and broths are those which require least assistance from the liver in their digestion, are those which should constitute the bulk of the diet of such children, for whom a diet list should be prepared and rigidly enforced. Where intestinal indigestion appears as a complication, peptonized foods ought to be of value, though as a matter of fact, pepsin and salicylic acid (2 + 1) has in the hands of writers been of more real value, than any form of peptonized food yet tested by him. The salicylic acid conjoined with compound spirits of lavender (B. P.), is also valuable in those cases, attended with the deposit of lithates in the urine as a well-marked symptom, both of the drugs having, in some way, a decided effect upon the excretion of uric acid in a more soluble form.

Old-fashioned biliousness and gastric catarrh

are satisfactorily treated with alkalies and laxatives, preference in these cases being given to calomel, for we substitute in these cases castor oil, magnesia, etc., we only aggravate after temporary relief. As a hepatic stimulant, that is one which increases the flow of bile, without regard to its expulsion, calomel is, however, far inferior to the bichloride, podophyllin, or even benzoate of ammonia. According to Rutherford's experiments one of these should be employed when hepatic incompetence is becoming chronic, and for the relief of migraine, in similar cases the writer has found no one remedy equal in value to antipyrin. The same is also very valuable in those cases attended with high febrile excitement, often the highest met with in children, except pneumonia and scarlet fever. What the exact chemical action of the antipyrin is, I am unable to say. Perhaps we may learn from Dr. Parkhurst's paper, but I am convinced that in some way it assists in the excretion of these toxic leucomaines, to whose private study I invite your personal attention, being convinced that such investigation will yield in the near future valuable scientific and practical results.

DR. CHRISTOPHER thanked the reader for bringing the subject before the Section, and elucidating the pathology of a very frequent and obscure class of cases. He spoke at some length upon a condition to which he gives the name hyper-digestion; a formation of ptomaines and alkaloids of putrefaction in the intestinal tract. If the liver is incompetent to deal with the excess of ptomaines, some of these are carried into the circulation, and produce their peculiar effects through the medium of the central nervous system, like all other alkaloids. Since ptomaines can only be formed from nitrogenous foods, it follows, that in the treatment of these cases, such foods should be withheld.

He was accustomed to use calomel as a preliminary cathartic, and soda phosphate afterwards in the mornings as a hepatic stimulant. Salol, salicylic acid and naphthaline, he employs as intestinal antiseptics. His treatment has proved very satisfactory.

DR. GEO. WHEELER JONES thought the term "hepatic incompetence" a good one. It was more troublesome than other forms of indigestion in children. He used oil of wintergreen with sugar or syrup. It would relieve the acid diarrhoea. It is not a chemical compound, and he preferred its use to salicylate of soda. He also said that bichloride of mercury in minute doses was more persistent, and acted more upon the deeper structures than calomel. Another remedial agent was common salt.

CONTROL OF FEMALE COSTUME.—A physician of Missouri announces that he will not take a female patient unless he can order the costume as well as the medicine.

A RECTAL PLUG. FOR SENN'S METHOD OF INSUFFLATION OF HYDROGEN GAS.

BY A. H. MEISENBACH, M.D.,
OF ST. LOUIS, MO.

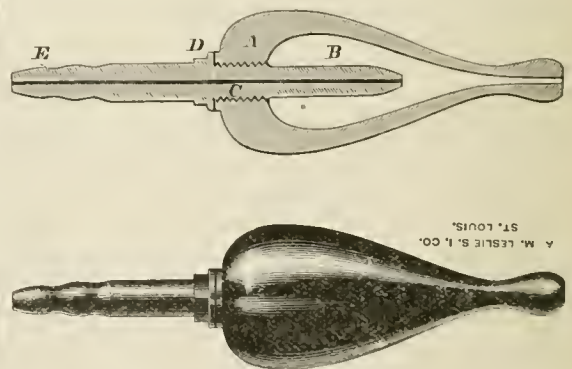
In repeating Dr. Senn's experiments, of insufflation per rectum of hydrogen gas, I found considerable difficulty at times, to prevent the gas from escaping out of the rectum, using the ordinary syringe tip. I found this to be the case in experimenting on dogs, and also on the human cadaver.

Dr. Senn recommends in his paper on "Insufflation of Hydrogen Gas per Rectum," etc., that "an assistant hold the margin of the rectum around the syringe tip."

In order to obviate the inconveniences of an ordinary syringe tip, and do away with the need of an assistant in controlling the margin of the rectum, I devised the herein described rectal plug.

This plug has given great satisfaction, having used it in applying Senn's test in four cases of gunshot wounds of the abdomen which were brought to the City Hospital, and in a case of obstruction of the bowel due to the rupture of a Fallopian pregnancy, where obstruction was produced by an immense coagulum—later case occurring in private practice of Dr. Hornsby, and in which I applied "Senn's Test," demonstrating the value of this measure in diagnosing intestinal obstruction.

In the above applications of Senn's test the plug completely plugged the rectum and effectually prevented the regurgitation of the gas, and allowed the gas bag and plug to be controlled by one person. The plug is made of hard rubber. The annexed cut shows a half size perspective



and sectional view of plug. A represents conical plug, with tip similar to ordinary syringe tip. B is a hollow chamber in plug into which extends Tip E, on which is a thread which screws into plug as shown at C. At D on Tip E is a square shoulder and round collar. The square shoulder is for the purpose of allowing a wrench to be used to tighten the tip into plug. Between collar on plug and collar on tip at D a washer is used, so

as to insure perfect air-tightness. The end of Tip E which projects outside of plug is corrugated, so as to easily and tightly fit into rubber tubing from gas bag.

The object of having plug hollow and the tip E project into chamber as shown, is to prevent clogging of the direct communication with the gas bag, when inserting end of plug into rectum, by fæces or mucus which may be in the rectum. Should clogging of tip of plug occur it will not interfere with gas escaping from Tip E into chamber, and can be readily removed or blown out by pressure from gas bag.

I have found that pouring a little sweet oil into chamber, through opening in plug into chamber, in a measure prevents the liability to clogging, as the oil lubricates the sides of opening and facilitates its being readily blown out by pressure from the gas bag.

MEDICAL PROGRESS.

ERYTHROPHLÆIN IN CARDIAC AFFECTIONS.—DR. HERRMANN, in a recent number of the *Wiener Klinische Wochenschrift*, gives an account of experiments which he had performed in the clinic of Professor Drasche in the Vienna General Hospital, on the effect of erythrophlæin on the diseased heart. It was used in cases of compensated and non-compensated failures of the heart, as well as in cases of fatty heart with slight disturbances of circulation. The drug was used in a solution of 0.002 grams of erythrophlæin in 10.0 grams of laurocerasus water, ten drops of this solution being given every hour. In general, the drug was well tolerated, and only in a case of insufficiency of the aorta depending on acute articular rheumatism did the sensation of disgust and great irritation supervene. Retardation of the pulse after the administration of erythrophlæin came on in several cases, and this was particularly true of the case of insufficiency of the aorta after 150 drops of the solution had been given for eight days. The number of the pulse-beats was reduced from 100 to 84 a minute, and in another case of insufficiency and stenosis of the mitral valve, the pulsations decreased from 100 to 68 a minute after the administration of 50 drops of the solution, and during an interval of time from mid-day till 5 P.M. This, however, was not constant, as in the last mentioned case the number of the pulsations reached 108 a minute three hours later, although the administration of the solution was continued. In another case of insufficiency of the mitral valve with severe palpitations, the drug was administered for twelve days, and it was not until some days later that the frequency of the pulsations sank from 120 to 96 in a minute, and at the conclusion of the experiment it decreased

to about 84 beats. As to the effect of the erythrophlæin on the renal function no particular influence could be observed in some cases, whereas in another series of cases the effect was quite striking. In a patient affected with incompetence of the mitral valve the daily quantity of urine, during an interval of twelve days, increased from 800 to about 1,500 cubic centimètres. In another case of slight fatty heart, where, before the use of erythrophlæin, the number of the pulsations was from 68 to 60 a minute, and the quantity of urine reached 700 cubic centimètres, the latter increased to 2,150 cubic centimètres, while the pulse remained unchanged. The disturbances of respiration had also diminished. Erythrophlæin had also a marked effect on the pupil. In a patient with incompetence of the mitral valve, persistent dilatation of the right pupil ensued on the sixth day after administration. In another case with insufficiency of the aortic valves, distinct dilatation of both pupils came on on the fifth day; this disappeared some days later when the administration of the drug was discontinued. Kaposi had also observed dilatation of both pupils in a case of poisoning from the subcutaneous injection of two centigrams of erythrophlæin (*Journal*, March 24th, 1888). For the sake of comparison, experiments were made with strophanthus. In cases in which erythrophlæin exerted no particular influence on the frequency of the pulsations, the arrhythmia, and the congestive symptoms, from 60 to 70 drops of the tincture of strophanthus with equal parts of laural water were administered in the day. The difference was very striking, and the slight effect of the erythrophlæin could not be compared with that of strophanthus. In one case, for instance, the frequency of the pulsations after the use of strophanthus soon fell from 112 to 72 a minute, and remained nearly at this rate. The arrhythmia had almost entirely disappeared, and the excretion of urine was augmented to a much higher degree than after the use of erythrophlæin. Symptoms of poisoning with erythrophlæin were observed on only two occasions. The result of the experiments with erythrophlæin may be summarized as follows: The drug had a marked retarding influence on the pulse, but the effect was not lasting. This was also true of its diuretic influence. The drug was well borne, and might be tried in cases in which digitalis, strophanthus, and similar medicaments were either not well tolerated or were contraindicated. Erythrophlæin did not appear to have any cumulative effect.—*British Medical Journal*, Sept. 1, 1888.

TREATMENT OF TYPHOID FEVER IN CHILDHOOD.—DR. A. JACOBI says: Can typhoid fever be *aborted*? or in other words, can incubation be interrupted? An affirmative answer to this question has often been given, but it is difficult to prove the correctness of the diagnosis in an

alleged case of typhoid fever lasting a few days only. Still, there can be no objection to believing that the proliferation of the poison floating in the blood may be interrupted by antifermentative treatment, and it is certainly either justifiable or advisable to try the effect of otherwise not injurious antifermentatives, such, perhaps, as creolin or bichloride of mercury. As regards the early administration of a large dose of calomel, its effect is notoriously good, no matter whether it acts as a disinfectant directly on the poison, or whether it simply relieves the intestinal tract of the poison introduced, and in progress of proliferation. A child of 3 years may take a dose of 3 or 4 grains; a child of 8 years one of 7 or 8 grains. While the purgative effect of the calomel can be obtained by simply introducing the powder into the mouth, there to be absorbed, it is better in this case to let it be swallowed. It can be safely given during all of the first week of the disease. When, as frequently, there is constipation during the course of the disease, calomel is no less beneficial, but then it must be given in smaller doses, which may be repeated. Small doses of a quarter of a grain to a half grain repeated several times a day, will even have a good effect after diarrhoea has been present and been relieved.

With regard to the *general treatment* of the typhoid fever of children, we are equally liable to injure either by overactivity or by neglect. The so-called *expectant* treatment has its great dangers in the hands of those who make it their invariable rule; it is safe in the hands of those only who have learned to treat the sick rather than the sickness. The air in the sick-room must be cool, the windows open. Drafts, it is true, must be avoided, but screens around the bed will permit the opening of both windows and doors. The bed-sheets must be smooth; four or eight safety-pins will fasten them to the corners and sides of the mattress. At an early period the whole surface ought to be washed with either water alone or with alcohol and water. The hair, when long, ought to be cut. The children must be allowed plenty of water. Those who are liable to have dry lips and tongue must be made to drink a small quantity of either water or dilute muriatic acid in water, ten minims to the tumblerful, in small quantities or ever ten or twenty minutes. Fissures around the lips or in the tongue ought to be washed with a saturated solution of boracic acid, or when bleeding, should be painted once a day with a mild solution of nitrate of silver (not more than 1 per cent.) and afterwards painted with an ointment consisting of boracic acid and lanolin.—*Archives of Pediatrics*, December, 1888.

CREOLIN AS AN ANTISEPTIC.—EISENBERG has found that a 2 per 1,000 mixture of creolin

killed the cholera bacillus and the streptococcus of pus and of erysipelas within two minutes; the bacillus of anthrax was killed in five minutes, while the typhoid bacillus and the staphylococcus of pus were still alive after one hour. This last organism, as well as tetragenesis, was killed in ten to fifteen minutes by a 2 per cent. mixture. Compared with carbolic acid, it was found that a 3 per cent. mixture of creolin killed the spores of the anthrax bacillus in two days, a 6 per cent. mixture within twenty-four hours, while a carbolic acid mixture up to 8 per cent. had no effect on the spores within seven days. A similar comparative result was obtained with the hay bacillus, and the superiority of creolin over carbolic acid was further shown by its greater power in preventing the growth of organism in cultures. Creolin is not poisonous, as it may be given in large doses to dogs without deleterious effect. Eisenberg recommends its use in surgery in place of corrosive sublimate, carbolic acid, and iodoform.—*British Medical Journal*, Nov. 10, 1888.

CONSTIPATION IN INFANCY.—In cases that do not recover under proper dietary management, DR. EUSTACE SMITH recommends:

R. Tinct. nucis vom. ℥ss.
Tinct. belladonnæ ℥x.
Infusi sennæ ℥xxx.
Infusi calumbæ ad ʒj.

This may be given thrice a day at first. After a time, two doses will be enough; and before long, one dose at bedtime. An equally good or better prescription is:

R. Tinct. nucis vom. ℥ss.
Ext. cascariæ sagradæ liq. ℥xxx.
Tinct. belladonnæ ℥x.
Inf. calumbæ ad ʒj.

The keynote is the combination of nux vomica with belladonna and some gentle laxative. Dr. Smith also recommends, where the motions are very dry, a saline aperient:

R. Quiniæ sulph. gr. ¼.
Acid. sulph. aromat. ℥j.
Tinct. nucis vom. ss.
Aque ad ʒj.

For a child of 6 months.—*Medical Record*, November 24, 1888.

INFLUENCE OF ANTIPYRETICS, PARTICULARLY OF ANTIPYRIN, ON THE AMOUNT OF GLYCOGEN IN THE LIVER.—MM. LÉPINE AND PORTERET have found that the administration of antipyretics (and they used antipyrin principally) decidedly increases the amount of the hepatic glycogen and diminishes that of the hepatic sugar. The antipyretics are obstacles to the transformation of glycogen into sugar, and the fact seems to be in perfect harmony with the recent work of Chauveau on the consumption of glycogen and the production of heat.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....\$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Duglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, DECEMBER 29, 1888.

IMPORTANT NOTICE.

Hereinafter all letters, papers, notices and exchanges, designed for THE JOURNAL, should be addressed to "THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 68 Wabash Avenue, Chicago, Illinois." And persons having inquiries to make, or business to transact, will receive prompt attention at the same place until further notice.

CLOSE OF VOLUME XI.

The present number closes the eleventh volume of this journal, and completes the first five and a half years of its publication. As its readers already know, it also terminates the editorial services and management of the present editor.

Though already advanced in life and overburdened with professional work, he accepted the additional heavy responsibility, in 1883, of attempting to establish THE JOURNAL of the Association on a permanent financial basis, and at the same time make it a potent influence for counteracting the disintegrating tendencies of an excessive specialism and an open opposition to the National Code of Medical Ethics; and thereby preserve intact and further develop the grand National organization of the profession of this country that had been so well founded by the National Convention of 1846-7. Only two brief years had passed when the persistent and unnecessary controversy concerning the organization of the Ninth Interna-

tional Medical Congress was developed, and forced upon him an additional amount of labor difficult to bear. But the remarkable epidemic of professional controversies that has characterized the last decade has subsided, and should be left for the future historian.

In the meantime, THE JOURNAL, that had been commenced in July, 1883, when there were only about 1,000 members who had paid their dues annually, as shown by the Treasurer's report at the meeting in Cleveland that year, has been issued every week from that time to the present, when about 4,000 members are paying dues annually, to which may be added a considerable list of paying subscribers who are not members of the Association. The income, that was \$5,008, as shown by the Treasurer's report in 1883, has increased, as shown by the same officer's report in 1888, to \$25,649, and the Association has become owner of its own printing-office and materials, valued at \$2,373.90, without one dollar of indebtedness in any quarter. The pages of reading-matter in THE JOURNAL have been increased until they number eight more than those of any other weekly medical journal in this country; and in quality of paper, type and illustrations they are excelled by those of no other. Equally gratifying is the fact that the Association has not only quadrupled its paying membership during the last half decade, but it has extended the scope and increased the efficiency of its working machinery as represented by its Sections, and its general meetings have been characterized by greater harmony and a more active spirit of scientific investigation; while the several State and local medical societies, upon which the whole fabric of permanent National organization rests, have been correspondingly increasing in their efficiency and influence for good.

Having thus more than realized all the ardent hopes of success that inspired him in commencing his editorial task in 1883, it is with the greatest pleasure that he now surrenders the honorable and responsible position to him who has been selected by the Board of Trustees to fill the same. DR. JOHN B. HAMILTON, for ten years the efficient Supervising Surgeon-General of the U. S. Marine Hospital Service, and late Secretary-General of the Ninth International Medical Congress, needs no introduction to the readers of THE JOURNAL, and no eulogy by me. In the prime and vigor of

his manhood, with high literary and professional attainments, and well trained executive ability, I welcome him to a field of labor that will afford full scope for every noble attribute of which he is possessed. May he live to honor the position many years, and may THE JOURNAL, the American Medical Association, and all the State and Municipal Medical Societies in affiliation with it, continue to hold the whole medical profession of these United States in one grand harmonious organization, ever increasing in numbers, in scientific attainments, in skill for the relief of human suffering, and in reverence for that beneficent Deity who holds the destiny of individuals and nations alike in his own hands, and yet does not allow the poorest of his creatures to suffer without his notice. Finally, the retiring editor cordially wishes that all the readers of THE JOURNAL and its incoming editor may enjoy a truly *Happy New Year* for 1889, and repeat the same with each annual return for all the years to come.

PROFESSIONAL ABORTIONISTS.

The preface to the first edition of Sydenham's "Method of Curing Fevers," which appeared in 1666, opened as follows: "Whoever takes up medicine should seriously consider the following points: firstly, that he must one day render to the Supreme Judge an account of the lives of those sick men who have been intrusted to his care. Secondly, that such skill and science as, by the blessing of God, he has attained, are to be specially directed towards the honor of his Maker and the welfare of his fellow-creatures, since it is a base thing for the great gifts of heaven to become the servants of avarice or ambition. Thirdly, he must remember it [is no mean ignoble animal that he deals with."

Within the past two weeks the public and the medical profession of Chicago have learned, through exposures in the *Chicago Times*, that there are numbers of professional midwives and licensed physicians in this city, who declare that for a money consideration they will commit the loathsome crime of abortion, or, if some will not, they can recommend others that will. The *Times* has printed the names of midwives and physicians who declare they are ready to do murder, and most foul murder, for money, or else recommend some one that will commit a violation most wicked

of the laws of God, Nature, and man. As between the assassin, or the thief, and the man that recommends the assassin or thief there is but little difference. Between the licensed midwife-abortionist and the licensed physician-abortionist, what is the difference? It is one of degree, and the deeper degree of infamy attaches to the latter. He is supposed to be more intelligent, to be actuated by higher and more noble principles, and to have for the chief end and aim of his life-work the preservation of human life.

Nothing we can say in this age can paint the crime of abortion in all its loathsomeness, nor its perpetrators, and the inciters to or abettors of its perpetration in all their moral blackness and professional degradation. "The licensed Herods" that have been exposed, that are willing to commit murder, that have blackened the good name of our noble profession, and given themselves over to the eternal infamy and abhorrence of all mankind, have but themselves and their sordid motives to thank for the present exposure, and its possible consequences.

In expressing themselves as willing to commit this crime, or to recommend others that will, men show themselves possessed of consciences too near in kind to those of brutes and beasts to be reached by moral agencies. What remorse may come to them will be born of the fact of exposure—the sorrow of the thief that he is caught.

It is not our purpose, nor is it proper for us to be judge and jury in regard to these cases. The State of Illinois has laws, and instruments for their execution; it has a State Board of Health; and there is a large medical society in this city, to which some of the offenders belong. Men that will commit abortion unfit for citizenship in any civilized state, are too far lost to moral responsibility for the profession of medicine, and too degraded to be the associates of honest men. Then let the police, the courts, the State Board of Health, and the medical societies take the record furnished by the *Times* and deliberately proceed with the execution of the laws of the State and the ethics of the profession with strict impartiality and unswerving justice. To leave the matter where it is, a simple newspaper exposure, will result in its horrors being forgotten in six months, while the black list will remain as a convenient directory for those who may be in want of abortionists in the future.

Will honest men endure the fellowship of lawless, abhorrent and infamous men that traffic for personal gain in the weakness and shame of poor erring humanity?

Criminal abortion, the National disgrace, has culminated in the exposure in Chicago. It is to be regretted that the matter was not worked up at the same time in other cities, so as to clear the country of the harpies that foul the medical profession.

After all, we may trace the origin of this matter, in a great measure, to our system of medical education, and to the attitude of the public and the newspapers in regard to higher medical education and State regulation of medical education and practice. We do not claim that all highly educated men are moral, nor that badly educated men are always immoral. But if the public and the newspapers will cease their interference with plans and projects for higher medical education, and for more stringent regulation of the practice of medicine, the medical profession will be improved, both for its own good and for that of the public.

EDITORIAL NOTES.

FOOD ADULTERATION IN MINNESOTA.—The report of Dr. Drew, of Minneapolis, Chemist to the State Dairy Commission, just made public, shows that the adulteration of food in Minnesota has assumed alarming proportions. In his report Dr. Drew says that no evidence of adulteration was discovered in the samples of flour and bread examined. In baker's chemicals nearly all were adulterated. Of 29 samples of cream of tartar examined 17 were adulterated, and bicarbonate of soda was only half pure. In the baking powders commonly used, ingredients were found which were likely to lead to the impairment of health. The alum powders are declared to be cheaply made and contain large proportions of flour or starch. Twenty samples of teas were examined and three found to be adulterated. Only 3 out of 7 samples of ground coffee were found pure. Of 81 samples of spices 64 were adulterated and 17 were pure. Out of 34 samples of "pure cider vinegar" 9 were found pure and 2 adulterated with water. Twenty-three vinegars, not cider, were found to be adulterated with water. Of 10 samples of cider all proved

to be apple cider adulterated with glucose sirup, citric or tartaric acid, or of a wholly fictitious character. All but one contained acids prejudicial to health. Adulterations were found in sugars, confectionery sirups, lard, honey, and in almost every article examined.

EXECUTION BY ELECTRICITY.—A committee of the New York Medico-Legal Society has made a report on the best method to be followed under the law for execution by electricity, which goes into effect in that State on January 1. It will be remembered that some unfavorable criticism was given upon the proposed method by a number of physicians in New York. The reasons given against execution by electricity were two, viz.: that it was not certain enough; and that if successful it was too humane, as it defeated the ends of justice by robbing the criminal's demise of all its terrors. No answer is needed to the latter reason, and the above-mentioned committee's report embodies directions which, if followed out, will make death as certain as it is swift. A stout table, covered with rubber cloth, is provided, upon which the prisoner is firmly bound. One electrode is inserted in the table in such a manner that it will impinge upon the spinal column between the shoulders; the other electrode is pressed to the back of the prisoner's head, the hair being cut close and moistened with warm water. A dynamo generating an electro-motive force of at least 3,000 volts is recommended, the current to pass alternately for thirty seconds. It is anticipated that these specifications will meet the approval of the State authorities.

POISONING FROM FALSE-TEETH PLATES.—A case of supposed poisoning from denture plates is reported from New Haven. The sufferer recently bought a set of false teeth with a rubber plate. He had worn them but a short time when his tongue began to swell. This continued until it was much beyond the natural size. His eyelids also swelled up so that he was blind for a time, and other parts of the body have been similarly affected.

DEATH AFTER A LONG FAST.—A man in Kansas City died on Dec. 16, after a fast that began on Nov. 1, in which he took only a little water occasionally. He was a sufferer from renal disease, and after Nov. 1, could not be induced to take food.

ASSOCIATION ITEMS.

CATALOGUE OF ADDITIONS TO THE
LIBRARY OF THE AMERICAN MED-
ICAL ASSOCIATION,

BY DONATIONS, EXCHANGES AND SUBSCRIPTION,
FROM MAY 1, 1886, TO MAY
1, 1888.

Abbott, H. C. de S., *Yucca Angustifolia*;
Fouquieria Splendens.

Adams, S. S., *Dangers of Kissing*; *Systematic Training of Nursery Maids*.

Allbutt, T. C., *Visceral Neuroses*.

Andrews, E., *Incision, Digital Exploration and Drainage of Lumbar Abscesses*; *Rectal and Anal Surgery*.

Arlt, F. v., *Diseases of the Eye*.

Attfield, J., *Chemistry, General, Medical and Pharmaceutical*.

Army Engineer Department (U. S.), *Annual Report of the Chief of Engineers for 1885*.

Army Medical Department (U. S.), *Index Catalogue of the Library of the Surgeon-General's office*, Vols. vii, viii.

Baker, H. B., *Typhoid Fever and Low Water in Wells*.

Baker, L. W., *Mental Epilepsy*.

Barker, F., *Influence of Maternal Impressions on the Fœtus*.

Beale, L. S., *Urinary and Renal Derangements*.

Beard, G. M., *Sexual Neurasthenia*.

Bell, R., *The "Medicine Man."*

Bettman, B., *Recurrent Hæmorrhage into the Anterior Chamber*; *Ocular Troubles of Nasal Origin*; *a Case of Purulent Inflammation of the Middle Ear with Brain Complications*.

Bishop, S. S., *Diseases of the Middle Ear*; *Statistical Report of 5,700 Cases of Ear Diseases*; *Hay Fever, (Prize Essay)*; *Operations for Mastoid Disease*; *Treatment of Chronic Suppurative Otitis Media*; *Operations on the Drumheads for Impaired Hearing*.

Boyland, G. H., *Buffalo Lithia Water in the Treatment of Diseases of the Nervous System*.

Brewer, G. E., *Modern Treatment of Urethritis*.

Bulkley, L. D., *Asthma*; *"Dermatitis Herpetiformis."*

Burnett, S. M., *The Meter Lens*; *The Dioptry Again*; *Remarks on Cataract Extraction*.

Bussey, S. C., *Maternal Impressions*; *Some Rare Clinical Observations in Obstetric Practice*; *Persistent Vomiting during Labor Relieved by Anæsthesia*; *Cystocolpocele Complicating Pregnancy and Labor*.

Byford, W. H., *Diseases of Women*.

Chazarain et Ch. Dègle., *Les Courants de la Polarité dans l'aimant et dans le Corps Humain*.

Cheatham, W., *Suppuration de l'oreille moyenne*.

Churchill, F., *Face and Foot Deformities*.

Clark, C. A., *Handbook for the Instruction of Attendants on the Insane*.

Clowes, F., *A Treatise on Practical Chemistry*.

Coe, H. C., *Malarial Manifestations due to Traumatism*; *Is Disease of the Uterine Appendages as Frequent as it has been Represented?*

Cohen, J. Solis, *Some Clinical Considerations on Access to Benign Intra-laryngeal Neoplasms through external incisions*; *Sore Throat*; *The Throat and its Diseases*; *A Case of Paralysis of the Left Vocal Band in Extreme Abduction, following an Incised Wound of the Neck*; *Galvano-Cautic Method in Nose, Pharynx and Larynx*; *A Case of Primary Tuberculosis of the Larynx*; *Hyperdistension of the Air-Cells as a Therapeutic Measure*; *A Case of Prolapse of the Laryngeal Sac*; *Apsithyria*; *Fetid Coryza*; *On the Elements of Prognosis and of Therapeutics in Tuberculosis of the Larynx*.

Cook, G. W., *Is Dentition a Cause of Disease?*

Cook, W. C., *The Relation of Health Officers, Medical Profession and the People to Each Other*.

Corning, J. L., *Local Anæsthesia*.

Cutter, E., *The Therapeutical Drinking of Hot Water*.

Creighton, C., *Unconscious Memory in Disease*.

Curtman, C. O., *Lessons in Quantitative Chemical Analysis*.

Blass, D. F., *Naturalismus und Materialismus in Griechenland zu Platon's Zeit. (Rede)*.

Fischer, D. B., *Ueber einen Lichtentwickelnden, im Meerwasser gefurdenen Spaltitz*.

Foerster, R., *Lucian in der Renaissance. (Rede)*; *Die Klassische Philologie der Gegenwart. (Rede)*; *De Polemonis Physiognomonicis. (Dissertatio)*.

Forchhammer, *Kunstbestrebungen (Rede)*.

Hensen, Victor, *Die Naturwissenschaft im Universitäts Verband. (Rede)*.

Waltz, G., *Friedrich Christoph Dahlmann. (Gedächtnissrede)*.

Weyer, G. D. E., *Heinrich Ferdinand Scherk. (Gedächtnissrede)*.

INAUGURAL DISSERTATIONS.

Alexander-Helssen, H., *Fall von geschwulst-artiger Hypertrofié des Herzseptums*.

Bahrs, F., *Ueber einfache Exsudativ-Peritonitis, etc.*

Bartels, A., *Ein Beitrag zur Lehre von der lokalen Tuberkulose*.

Behrens, J., *Ueber die anatomischen Beziehungen zwischen Blatt und Rinde der Coniferen*.

Behrens, T., *Ueber Fremdkörper in den Luftwegen*.

Bender, E., *Ueber stehende Schwingungen einer Flüssigkeit welche auf einer festen Kugel ausgebreitet ist*.

Berg, P., *Die Syntax des Verbuns*.

- Berger, G., Fünf Fälle von Erweiterung der Stirnhöhlen durch Flüssigkeitsansammlung.
- Borchardt, B., Die Entwicklung der Formel für das Höhenmessen mit dem Barometer.
- Braasch, H., Beitrag zur Statistik und Anatomie des Speiseröhren Krebses.
- Bruhn, Th., Beitrag zur Statistik der Exstirpation Tuberkulöser Lymphdrüsentumoren.
- Burmester, F., Ueber Intraoculare Blutungen.
- Busse, G., Der Conjunktiv im altfranzösischen Volksepos.
- Caspersohn, C., Zur Statistik und Radicale operation des Mastdarmkrebses.
- Classen J., Zur Statistik und Ätiologie der Neuralgie.
- Clausen, O., Ein Fall von Sympathischer Ophthalmie trotz Resection des Opticus.
- Danielsen, H., Krebs-Statistik nach den Befunden des Pathologischen Instituts.
- Dethlefsen, A., Ueber das Credé'sche Verfahren zur Verhütung der Blennorrhœa Neonatorum.
- Drost, K., Ueber das Nervensystem und die Sinnesepithelien der Herzmuschel.
- Dürkopf, E., Zur Kenntniss des Aldehydcollidins.
- Ebhardt, J., Ueber die seltneren Ausgänge der krupösen Pneumonie.
- Ehlers, P., Beiträge zur Morphologie der Schilddrüse.
- Elbel, K., Uebereinige Derivate der Opiansäure.
- Elsner, A. v., Ueber Form und Verwendung des Personalpronomens im altprovenzalischen.
- Eysoldt, W., Ein Beitrag zur Frage der Fettresorption.
- Doering, K., Statistik der Amputationen und Axarticulationen, etc.
- Falck, H., Bindegewebsgeschwülste des Halses.
- Fick, W., Gedicht von der Perle.
- Fischer-Benzon, L. v., Anatomie und Ätiologie der Beweglichen Niere.
- Führmann, J., Die Alliterierenden Sprachformeln in Morris' Early English Alliterative Poems, etc.
- Gerlirg, K., Ueber Athetosis.
- Goerke, R., Die Sprache des Raoul de Cambrai.
- Grosse, W., Ueber Polarisationsprismen.
- Haacke, E., Beitrag zur Pathologischen Histologie des Magens.
- Haas, C., Beiträge zur Lehre von der Arthritis Gonorrhœica.
- Hadenfeldt, C., Beitrag zur Kenntniss der Wirkung des Coniuns.
- Harder, C., De Joannis Tzetzae Historiarum.
- Harder, K., Ein Fall von Menstrueller Verblutung.
- Hesekiel, A., Die Pyridinbasen in der Chemischen Litteratur.
- Hitzemann, C., Beiträge zur Vergleichenden Anatomie der Ternstroemiaceen, Dilleniaceen, etc.
- Hoeneke, E., Drei Fälle von Allgemeinem Fœtalem Hydrops.
- Homburg, M., Zur Statistik der Cholera Nostras.
- Homeister, F., Ueber die Todesursachen des Säuglinge.
- Horst, J., Beitrag zur Path. Anatomie der Lymphdrüsen.
- Johannsen, J. O., Beitrag zur Pathologischen Anatomie und Histologie der Magengeschwüre.
- Jonas, V., Photometrische Bestimmung der Absorptionsspektren roter und blauer Blütenfarbstoffe.
- Katz, J., Ein Fall von Sarkom des Uterus.
- Karstens, W., Sächsisch-Hessische Beziehungen, 1524-26.
- Kay, A., Beitrag zur Statistik der Zahucaries.
- Kayser, H., Zur Syntax Molière's.
- Kolls, A., Zur Lanvalsage.
- Krüger, O., Behandlung des Ulcus Corneae Serpens.
- Knuze, F., Beitrag zur Lehre der Staubinhalationskrankheiten.
- Jacobson, H., Ein Fall von Geheiltem Aneurisma Dissecans.
- Jensen, A., Syntactische Studien zu Robert Garnier.
- Lage, O., Ueber Methylderivate des Pyridins.
- Lassen, J., Ueber Lungenabscess.
- Lau, B., Beitrag zur Kenntniss des Wirkung des Strychnins.
- Liebrecht, A., Ueber Nicotin.
- Loehmann, H., Beiträge zur Kenntniss der Chronischen Hirnabscesse.
- Marben, A., Beitrag zur Kenntniss der Sandkorngeschwülste.
- Marquardt, A., Kant und Crusius.
- Marxsen, T., Anomalie der Triscuspidalis.
- Matthiessen, B., Ueber die Bahn des Planeten (107) Camilla.
- May, K., Ueber des Geruchsvermögen der Krebse.
- Merck, W., Ueber Cocain.
- Meyer, H., Knochenabscesse.
- Michaelson, W., Euehytraeus Möbii Mich.
- Moebius, O., Ueber die Foerster'sche Iridectomia Maturans.
- Moennichmeyer, C., Berechnung der Absoluten Störungen der Themis durch Jupiter.
- Mose, F., Ueber Exenteratio Bulbi.
- Müller, E., De Numero Ciceroniano.
- Münster, K., Thomas Chestris, "Launfal."
- Nicolai, N., Zwei Fälle von Partieller Verdopplung der Vena Cava Inferior.
- Niemeyer, H., Ein Fall von Lungenarterien-Embolie nach einer Distorsio pedis.
- Noelting, J., Ueber das Verhältnis der sogenannten Schalenblende zur regulären Blende und zum hexagonalen Wurtzit.
- Oechsler, P. A., Aktinomykosis Hominis.
- Ohnesorge, W., Der Anonymus Valesii de Constantino.
- Oppermann, E., Zwei Seltene Anomalien der Grossen Gefässstämme.

Petersen, E., Beitrag zur Statistik des Typhus Abdominalis.

Petersen, M., Ueber Hornhautflecke als Ursache der Myopie und Anisometropie.

Plehn, A., 35 Fälle von Schädel-Fraktur.

Plehn, F., Beitrag zur Lehre vom Chronischen Hydrocephalus.

Reher, L., Ueber Aethyl-derivate des Chinolins.

Roediger, E., Statistik der — an der oberen Extremität ausgeführten grösseren Amputationen.

Rohlf, E., Erbllichkeit der Tuberkulose.

Rinenfeld, P., Ueber Hysterie bei Kindern.

Raeder, H., Die Tropen und Figuren bei R. Garnier.

Oldach, H., Ueber eine Synthese des B-Methyl-tetramethylendiamins und des B-Methylpyrrolidins.

Sachau, J., Ätiol. und Prophyl. des Puerperalfiebers.

Schack, F., Nephthys Coeca Fabricins.

Schäff, E., Integument der Lophobranchier.

Schütze, P., Beiträge zur Poetik Otfriids.

Schleide, F., Kenntniss der Hydrocele des Kindesalters.

Schmidt, H., Das Pronomen bei Molière.

Schmidt, R., De Hymenaeo et Talasio.

Scholefield, O., Amblyopie und Amaurose.

Schumacher, E., Zur Syntax Rusteuf's.

Schwartz, G., Statistik der Operativen Behandlung des Uterusvorfalles.

Sievers, L., Schmarotzer-Statistik.

Spee, F. Graf., Bewegungsapparat, etc., der Darmzotten.

Stahl, C., Beitrag zur Casuistik der Schädelerletzungen.

Stahl, F., De Ausonianis Studiis Poetarum Graecorum.

Sye C. G., Beiträge zur Anatomie und Histologie von Jaera Marina.

Vogelius, L. Sp., Ueber den Alcohol.

Wendeler, P., Ein Versuch die Schallbewegungen eines Konsonanten und anderer Geräusche mit dem Hensen'schen Sprachzeichner graphisch darzustellen.

Wandschneider, W., Zur Syntax des Verbs in Langley's Vision of William, etc.

Wegner, E., Zur Casuistik der Hirntumoren.

Zerdick, A., Quaestiones Appianae.

Goth, A., Die Typhusbewegung auf der med. in Kiel.

Consular Reports (U. S.), Nos. 75-78. Index to Nos. 1-59. Nos. 79-89.

Statistical Abstracts for Foreign Countries for each Year from 1873-1885.

Corbusier W. H., The Apache-Yumas and Apache-Majaves.

Coskery, O. J., Fracture of the Skull.

Cottell, H. A. Esthetics in Medicine.

Crothers, T. D., Hereditary and Psychological Phenomena in Inebriety.

Currier, A. F., Some considerations concerning Cancer of the Uterus.

Curtis, B. F., Contusion of the Abdomen with Rupture of the Intestine.

Davis, N. S., Lectures on the Principles and Practice of Medicine.

Davis, N. S., Jr., Arsenite of Bromine in Diabetes Mellitus.

Dauzat, A., Guide Médical aux Eaux de la Bourboule.

Day, R. H., Malarial Haematuria.

DeBeck, D., Hard Chancre of the Eyelids and Conjunctiva.

Dolan, T. M., On the Evils of Artificial Methods of Preventing Fecundation, etc.

Donaldson, F., Heredity in Tuberculosis.

Dudley, E. C., The Intraperitoneal Elastic Ligature.

Dulles, C. W., Indirect Fractures of the Skull.

Dunn, J. H., A Rare Neoplasm of the Skin.

Eastman, J., The Evolution of Surgery.

Education, Report of the Commissioner of Education, 1884-1885.

Circular No. 1, 1886, The Study of Music in the Public Schools.

Circular No. 2, 1887, The Study of History in American Colleges and Universities.

Edes, R. T., Text-Book of Therapeutics and Materia Medica.

Ehrlich and Laquer, Thalline.

Electricity: Report of the Electrical Conference at Philadelphia, 1884.

Erichsen, H., The Cremation of the Dead.

Ethnology. Contributions to North American Ethnology, vol. iii, 1877.

Farrar, M. C., Amyloid Degeneration of the Liver.

Fernald, F. C., Pleurotomy for Empyema.

Fernandez, A. M., Contribution to the Diagnosis of Yellow Fever.

Flint, A., A Manual of Auscultation and Percussion.

Foreign Relations of the U. S. Papers relating to: Washington, 1887, pp. 878.

Formento, F., The Biloxi Fever.

Fowler, J. R., Hydronaphthol.

Fraipont, F., Extirpation des deux Ovaries et des Trompes; De la Dilatation Utérine en Gynécologie; Note sur le Traitement de l'Erysipèle; Du traitement palliatif du Cancer Utérin par le raclage.

Fry, H. D., The Value of the Antiseptic System in Private Obstetric Practice.

Gazzo, J. B. C., Yellow Fever.

Gaut, F. J., Diseases of the Bladder.

Garnett, A. V. P., Sanitary Advantages of Tide-water, Virginia.

Geological and Natural History Survey of Canada; Annual Report, U. S., vol. i, 1885; Comparative Vocabularies of the Indian Tribes of British Columbia by W. F. Tolmie.

- Gibney, V. P., The Hip and its Diseases.
- Gihon, A. L., What is Medicine? (Address)
- Goddard, W. W., The Problem of the Inebriate.
- Grandin, E. H., Sterility in the Female.
- Granger, W. D., How to Care for the Insane.
- Green, E. M., On the Value of Brücke's Method for the Removal of Interfering Substances from Urine in testing for Glucose.
- Groner, F. J., Antiseptic Surgery for the Country Physician.
- Grove, J. H., Biography of Andrew Nebinger, M.D.
- Hamilton, J. B., On the Radical Cure of Hernia. College Addresses.
- Hardon, V. O., Vesical Irritation in Women; The Treatment of Uterine Flexions.
- Harris, V. D., Tubercle Bacillus in Old Specimens of Diseased Lungs.
- Hathaway, H., Temperature of the Body in Health and Disease.
- Holt, J., The Quarantine System of Louisiana.
- Holt, L. E., The Non-Ideality of Croupous Tonsillitis with Diphtheria.
- Hamilton, J. B., Our Alumnus and His Medical Environments.
- Hamilton, F. H., A Practical Treatise on Fractures and Dislocations.
- Heath, Ch., Injuries and Diseases of the Jaw.
- Hewson, A., Earth as a Topical Application in Surgery.
- Hill, B., and Cooper, A., The Student's Manual of Venereal Disease.
- Homan, G., Observations on Police Service and Physique in St. Louis, etc.
- Hudson, E. D., Essentials of the Physical Diagnosis of Thoracic Disease.
- Hughes, C. H., The Relations of the Nervous System to Hæmophilia, Malarial Hæmaturia, etc.; A Unique Case of Bilateral Athetosis; The Scientific Rationale of Electro-Therapy; Meconeuropathia.
- Ingals, J. F., Intubation of the Larynx.
- Ireland, G. H., The Preventable Causes of Disease, Injury and Death in American Manufactories and Workshops, and the Best Means and Appliances for Preventing and Avoiding Them. (Lomb Prize Essay.)
- Jacobi, A., Memoir of Austin Flint, M.D., LL.D.
- Jacobi, A., and others, Intubation of Larynx.
- James, F. L., Elementary Microscopical Technology.
- Jennings, C. G., The Technique of Tracheotomy and Intubation of the Larynx.
- Johnson, J. Taber, Can the Cæsarean Section be Safely Substituted for Craniotomy in the United States at the Present Time? The Mechanical Treatment of Vomiting of Pregnancy.
- Johnston, G. W., A Contribution to the Study of Cysts of the Vagina.
- Jolly, Id., Les Phosphates, leurs fonctions chez les Êtres vivants.
- Jones, H. M., Practitioner's Handbook of Diseases of the Ear and Nose.
- Jones, Mary A. D., Removal of the Uterine Appendages.
- Judson, A. B., Treatment of White Swelling of the Knee; The Uses of Adhesive Plaster in Orthopædic Surgery.
- Juler, H. E., A Handbook of Ophthalmic Science and Practice.
- Kemper, G. W. H., Practical Thoughts for Physicians.
- Ketchum, Fox and others, Pneumatic Differentiation.
- Kolipinski, L., On the Properties of Sodium Fluoride.
- Landesberg, M., Affections of the Eye dependent upon Hysteria.
- Lea Brothers & Co., The Year-Book of Treatment for 1884.
- Leonard, C. H., The Vest-Pocket Anatomist.
- Leonhardt, J. S., The Twenty-third Century of Medicine.
- Leuf, A. H. P., The Treatment of Scarlatina.
- Lewis, J. B., Intracranial Hæmorrhage.
- Lincoln, D. F., The Sanitary Conditions and Necessities of School-houses and School Life (Lomb Prize Essay).
- Logan, J. P., The Relations of the Medical Profession to the Use and Abuse of Alcoholic Liquors.
- Long, J. H., Microscopic Examination of Butter.
- Love, W. A., Report on Gynecology.
- Lutz, F. J., A Contribution to the Literature of the Rarer Forms of Abdominal Tumors.
- Lückes, E. C. E., Hospital Sisters and their Duties.
- McHatton, H., Malarial Hæmoglobinuria.
- McIlhany, J. S., The Therapy of Oxygen.
- McKee, E. S., The Early Diagnosis of Pregnancy; Consanguinity in Marriage.
- McLaughlin, J. W., Researches into the Etiology of Dengue.
- McMurtry, L. S., A Case of Ovariectomy.
- Maclean, D., Experiences in Clinical Surgery.
- Magruder, G. L., Operations for Phimosis as a means of Cure or Relief of some Nervous and other Symptoms.
- Marcy, H. O., The Recent Advances in Abdominal Surgery.
- Marine Hospital Service (U. S.), Annual Report of the Supervising Surgeon-General for 1886; for 1887; Report of Supervising Surgeon-General on the Arguments before the Committee on Commerce, H. R., Concerning the proposed Establishment of a Bureau of Health.
- Marsh, H., Diseases of the Joints.
- Martindale, W., Coca, Cocaine and its Salts.
- Marvin, J. B., Progressive Muscular Atrophy beginning in the Legs; The Aim and Purpose of the Medical Man.
- Matas, R., Report of the Case of a Patient

from whose Subcutaneous Tissue Three Larvæ of a Species of *Dermatobia* were Removed.

May, C. H., Method in Medical Study; Enu-
cleation with Transplantation and Reimplanta-
tion of Eyes.

Meyer, S., A Statistical Contribution and a
Comparison of Methods in the Treatment of Tu-
berculosis of the Joints.

Mines, Annual Report of the Department of
Mines, New South Wales, 1885.

Morgan, E. C., The Question of Hæmorrhage
following Uvulotomy.

Moore, C. W., A Review of the most important
Advances in Surgery, Medicine and Pharmacy in
the Last Forty Years.

Mundé, P. F., De l'Electricité comme agent
Thérapeutique en gynécologie, traduit par P.
Ménière.

Murphy, P. J., Chylous Ascites.

Napheys, G. H., Modern Medical Therapeu-
tics.

Nettleship, E., Diseases of the Eye.

Newman, R., Is Electrolysis a Failure in the
Treatment of Urethral Stricture?

Nunn, T. W., A Page in the History of Ova-
riotomy in London.

Obage, J., The Surgical Treatment of Diseases
of the Gall-Bladder.

Oldberg, O., Manual of Weights and Measures.

Orendorf, H., Urethral Contractions with Pros-
tatic Disturbances.

Otis, F. N., On some Important Points in the
Treatment of Deep Urethral Strictures; On the
Limitation of the Contagious Stage of Syphilis.

Parker, A. H., The Rational Treatment of
Rupture.

Great Britain, Imperial Maritime Customs Med.
Reports, 31, 32, 33, Issues.

Pomeroy, O. D., The Diagnosis and Treatment
of Diseases of the Ear.

Poore, C. T., Osteotomy and Osteoclasts.

Pye, W., Surgical Handicraft.

Reynolds, D. S. Oration before the Alumni
Assoc. Med. Chirurg. College, Phila.

Richey, S. O., A Contribution to the Manage-
ment of General Atrophy (Sclerosis?) of the
Conducting Apparatus of the Ear; General Atro-
phy of the Conducting Apparatus of the Ear.

Robinson, A. R., A Manual of Dermatology.

Rogers, H. R., A New Philosophy of the Sun;
New Theories of the Great Physical Forces.

Rohé, G. H., Practical Notes on the Treatment
of Skin Diseases.

Rosse, I. C., Notes Concerning a Few Cases in
which the Electro-static Remedy was used.

Salisbury, J. H., The Salisbury Treatment of
Disease.

Savage, G. C., Address. 1887. Headaches
due to Eye-Strain.

Seifert, A. and Müller, F., Manual of Clinical
Diagnosis.

Senn, N., Importance and Value of Experi-
mental Research; The Surgery of the Pancreas;
Address in Surgery; Air Embolism.

Simmons, G. L., Report on Surgery.

Simon, W., Manual of Chemistry.

Simpson, J. Y., Organic Materia Medica and
Therapeutics.

Sinclair, A. G., Iritis; Electro-Magnetism in
Ophthalmic Surgery.

Stebbing, H. F., Hydrophobia.

Steele, D. A. K., Report of the Committee on
Surgery. Illinois State Med. Soc., 1887; The
Microbic Revolution in Surgery.

Stenzel, K. G., Rhizodendron Oppoliense Göpp.
Sternberg, G. M., Disinfection and Individual
Prophylaxis against Disease (Lomb Prize Essay).

Storer, H. R., The Medals, Jetons and Tokens
illustrative of Obstetrics and Gynecology.

Stowell, C. H., The Student's Manual of His-
tology.

Stuckey, J. A., Report on Rhinology.

Sullivan, T. J., Administration of Chloroform.

Theobald, S., Case of Convergent Squint.

Thonipson, Sir H., On Tumors of the Bladder;
Important Points Connected with the Surgery of
the Urinary Organs.

Thorner, M., Removal of Foreign Bodies from
the Larynx.

Tipton, F., The Negro Problem from a Medical
Standpoint.

Tyler, Lachlan, Diphtheria and Tracheotomy.

Tyson, Jas., Does the Present State of Knowl-
edge Justify a Clinical and Pathological Correla-
tion of Rheumatism, Gout, Diabetes, and Chronic
Bright's Disease?

VanBuren, W. H., Lectures on the Principles
of Surgery.

Vaughan, V., Healthy Homes and Foods for
the Working Classes (Lomb Prize Essay).

Walker, J., Health Lessons.

Watson, B. A., Rational Medicine *vs.* Empiri-
cism.

Waxham, F. E., Intubation of the Larynx.

Webber, S. G., Treatise on Nervous Diseases.

Wells, F., Draper, F. W., *et. al.*, Six Lectures
upon School Hygiene.

Whitehead, W. R., Report on Orthopædic Sur-
gery.

Whittington, C. F., The Relation of Hospital
to Medical Education.

Whitwell, W. S., Transfusion in Typhoid Fever.

Wile, W. C., Surgical Notes.

Wilson, J., Drainage for Health.

Wood, E. A., Heredity and Education.

Woods, J. T., Finger Injuries.

Wooton, E., Tuberculosis and Scrofula.

Wright, T. L., Inebriism.

Wyman, H. C., Constitutional Treatment of
Caries and Necrosis.

Zaaijer, T. DeToestand der Lijken na Arseni-
cum-Vergiftiging.

The usual exchanges, including foreign and Domestic Transactions, Hospital Reports and College Announcements have been received, but are omitted for want of space.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, November 28, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D.,
IN THE CHAIR.

(Concluded from page 893.)

DR. WILLIAM HUNT read a paper on

DIABETIC GANGRENE.

DR. THOMAS G. MORTON, in opening the discussion, said: Thirteen cases of diabetic gangrene have come under my observation, generally in consultation. In all instances the disease involved some part of the lower extremity, generally originating in one or more of the toes, or about the dorsum of the foot. Many years ago I witnessed a needle operation for cataract in a young girl who was known to be markedly diabetic; sloughing and gangrene of the orbital contents resulted, and death by coma occurred on the third day. With some few exceptions, the patients I have seen with gangrene in the course of diabetes, have been in good circumstances. I refer to this because it has been suggested that this disease more frequently occurs among those who are surrounded by the comforts and luxuries of life, and not among the poor. An inquiry recently made of the superintendents of our State hospitals for the insane shows that although more than twenty thousand patients belonging to the indigent class have been under the care of the present medical officers of these hospitals, there has not, it seems, been a single case of diabetic gangrene in the institutions at Harrisburg, Dixmont, Danville, Norristown, or Warren. Gangrene in diabetes, in the cases I have seen, has generally started in a local inflammation, resulting from some very trivial cause; on several occasions I have known it to follow the operation of cutting a corn. The occurrence of gangrene in diabetes seems to be a certain indication of great nervous exhaustion, and of a general condition most critical. Although I have observed gangrene as a result of diabetic condition in parts of the body other than the extremities, notably diabetic carbuncular disease, yet gangrene appears more often in the toes and feet, where there is but a moderate amount of cellular tissue, and where the circulation in such cases is apt to be feeble.

The surgical treatment of this form of gangrene can generally be but palliative, most of the

cases I have seen have been promptly fatal. The ordinary principles of surgical treatment should be observed; all tension of parts ought to be relieved by deep, free incisions, which, by relaxing and draining the tissues, permit a better circulation; indeed, I have often arrested the rapid march of gangrene by such treatment. When a line of demarcation forms, which may occasionally happen, the question of amputation may arise. Occasionally the gangrene of diabetes is associated with most excruciating pain, not only in the affected limb, but apparently in the gangrenous parts. I have had two such cases, both females, and in each I performed nerve section, with partial relief in one, and with complete success in the other. In the first, I sectioned the posterior tibial, in the other the sciatic. The latter case I saw in consultation with the late Dr. L. M. Service, of Belmont, near the Falls of Schuylkill; the patient was 70 years of age, a large portion of the foot was already gangrenous, the pain in the foot and leg as far as the knee was excessive. I sectioned the sciatic in the middle of the thigh; the gangrene, which was not apparently hastened or influenced by the operation, very slowly extended for some weeks, until a point about four inches above the ankle was reached, where a line of demarcation formed. Subsequently, Dr. Service, Jr., removed all the gangrenous parts without encroaching upon the living tissues. The patient improved, was able to move about her room with comfort, and with entire freedom from pain; eight months afterward she died from an attack of acute dysentery.

DR. JOHN ASHURST, JR.: Of course, we have been familiar for years with the tendency of diabetes to suffer from gangrenous affections, such as carbuncle and, though not so characteristic, furuncle; and we have also known that intracranial injuries may give rise to diabetes, or rather to glycosuria. Verneuil considers the question of sugar in the urine from irritation of the floor of the fourth ventricle, and shows that it may be a temporary condition, the sugar disappearing as recovery from the injury takes place, and without leaving permanent results.

In many cases of diabetic gangrene, as Dr. Hunt points out, the quantity of sugar in the urine at different periods varies; it may, in fact, be absent at times, and thus even careful examination of the urine during such intervals may fail to reveal the condition. I have but one recorded instance of diabetic gangrene in my personal experience. The patient was a man of middle age, sent to the hospital with strangulated hernia of some four or five days' duration. The attending physician informed us that the man had long been a diabetic. Operation was deemed imperative, and was undertaken. There was but a small patch of gangrene in the bowel, which was left in the wound after relieving the constrict-

tion, so as to allow the formation of an artificial anus. Next day not only the bowel but the edges of the wound and the surrounding tissues were gangrenous, and death rapidly ensued. It was a case, then, of rapid moist gangrene, following a comparatively small incision. I have seen other cases, which I believe were instances of diabetic gangrene, though this was not demonstrated by an examination of the urine, that bear out Dr. Morton's statement of the liability for this condition to be precipitated by slight injuries, such as the rubbing of a boot or cutting a corn. The gangrene is moist rather than dry, which may be a valuable factor in diagnosis. Whenever we see spontaneous gangrene of the moist variety, it should at least excite the suspicion of diabetes.

There are, however, other influences which predispose to spontaneous gangrene, the most common, perhaps, being alcoholism. Verneuil refers to this fact, and says that in what he calls "alcohol-diabetes" gangrene is particularly apt to occur, as there are then two predisposing causes acting at the same time. Another cause of gangrene after amputations and other severe operation, as surgeons are aware, is the presence of certain forms of Bright's disease, the granular kidney especially. In these cases diabetes may sometimes co-exist, and the presence of sugar fail to be recognized, simply because it is not looked for.

As to the treatment of diabetic gangrene, locally, the less done, as a rule, the better. I would go further than Dr. Morton, and would wait not merely for the line of demarcation but for that of separation, which may appear some days, or even weeks, later than the former, before proceeding to amputate. In the majority of cases of spontaneous gangrene, diabetic or not, it is the better practice to trim away dead parts with forceps and scissors, rather than to attempt a radical operation. I have seen, after amputation, rapid return of the gangrene, spreading extensively and causing death. Constitutionally, it is a suggestive fact that the one remedy of greatest value in spontaneous gangrene of any kind is a remedy which has obtained a deserved reputation in the management of diabetes, *i.e.*, opium. Opium in doses of 1 grain, or $1\frac{1}{2}$ grains, night and morning, or larger doses if needed, will often show its good effect in tending to arrest the gangrene in a short time. In many cases of spreading ulceration opium is also of value. For the treatment of diabetic gangrene then, opium internally and the less heroic treatment of the affected part seem to me to offer the best prospect.

DR. JAMES TYSON: Notwithstanding the exhibit made in the exhaustive paper of Dr. Hunt, I cannot but think that diabetic gangrene is a rare disease. Taking my own experience, re-

ferred to by Dr. Hunt, of fifty-five recorded cases in private practice since 1884, and probably at least twenty-five more prior to that date not so accurately recorded, and realizing, as I always have, its possible occurrence, the fact that not a single case has occurred under my observation is a significant one. It is to be remembered, of course, that many of these cases passed from my notice before they terminated. Dr. Hunt has asked for a parallel to his case of paralysis, etc. I cannot give an exact parallel, but one sufficiently so to justify an allusion in the same connection. A gentleman of multiplied business and financial interests came under my care for diabetes when he was 52 years old. Three years later there occurred a sudden hemiplegia. Within a few days after the paralysis occurred, the glycosuria disappeared and has not returned, though nearly two years have since elapsed. The percentage of sugar had been at one time as much as 7 per cent., and was constantly 2 or 3 per cent. In regard to the infrequency of diabetes among the poor no better proof could be given than the fact that in the Philadelphia Hospital, where more than a thousand patients are present at one time, it will often be impossible for weeks to get a case for lecture.

Dr. Mortou has alluded to the extreme pain in diabetic gangrene. I have observed the same thing in gangrene associated with granular kidney. I scarcely think it should be regarded as peculiar to the gangrene of diabetes.

DR. JAMES DARRACH: I have seen but one case of gangrene associated with diabetes, the one noted by Dr. Hunt in his admirable and exhaustive paper delivered to the Society this evening. Two others of the legs and two of internal gangrene have also come under my notice in my practice. Those of the legs were in women over 70 years of age, and while I cannot recollect about the condition of the urine in these cases, from my custom of examining the urine in old people for sugar, it having been stated that it was not an unusual thing to find it in the urine of the aged, I doubt the probability of sugar escaping my notice. Dr. Hunt has mentioned that diabetes is a disease of the well-to-do, and referred to the rarity of the disease in hospital patients and among the poor. This would appear to be corroborated by the statement of Dr. Jordas, who writes that in an aggregate of 22,735 admissions into, I think, four hospitals in Lisbon, there was not one case of diabetes, and of 5,700 deaths, in 1862, four only were from this cause. Perhaps climate may, in a measure, account for this small proportion of diabetes, the inhabitants of southern countries being considered by some writers not so liable to this disease; and I might add that, as some mal-condition of the nervous system holds a prominent position in the etiology of diabetes, we might find an explanation in the fact that the inhabitants of

the sunny South are not exposed to the strain upon that part of their organization, as are those who live in countries where the brain is taxed to the utmost.

Dr. Hunt has spoken of the more palpable and well-recognized forms of gangrene. Dr. Wm. H. Dickinson has reported that in the autopsies of five cases of diabetes he has found peculiar morbid changes in the cerebro-spinal system, consisting in dilatation of the arteries and a degeneration of the nervous matter at certain points external to them, occasioning destruction and excavation of the tissue around the vessel. Kaposi describes a peculiar form of inflammatory gangrene of the skin, which I suggest might be owing—as has been described as the pathological condition in shingles—to necrosis of the terminal nerve filaments. I mention these as a probable addition to gangrenous affections in diabetes, which I believe Dr. Hunt does not refer to in his paper, and would suggest that the nervous system should be examined more than has been done in autopsies of this disease. I would inquire of Dr. Cohen whether he included in his statement cases with small amounts of sugar, and whether the sugar was established by the cupric oxide test alone. I feel interested, as from my own examinations I have been led to doubt the existence of this element in normal urine. The existence of sugar has been supposed from the reduction of the oxide of copper. This reaction is accounted for by the uric acid and kreatinin. I would like to ask Dr. Tyson how far his examinations sustain this view.

DR. W. OSLER: I think that Dr. Hunt has underrated the proportion of cases of diabetes that die with pulmonary complications. In my own experience of six autopsies there were three—two of consumption and one of gangrene. Freirichs, in his important monograph, which contains a study of 400 cases, states that nearly one-half of all diabetics die of lung disease. There are three forms: The most common is a rapidly fatal lobar pneumonia, very liable to terminate in gangrene. Second is a broncho-pneumonia, which is still more liable to be complicated with gangrene. Thirdly, and most commonly, there is a genuine consumption, which is tuberculous, as demonstrated by the presence of the bacillus.

DR. NANCREDE: I would like to add another case to the list, which I had supposed was one of those referred to by Dr. Neilson, but it appears not; it was one of moist gangrene with large amounts of sugar in the urine, where the disease started in the fourth toe. In the other case, which Dr. Neilson mentioned to Dr. Hunt, I amputated the thigh high up for moist gangrene *not* due to diabetes. It illustrates the futility of amputating anywhere near the site of disease, for the artery was thrombosed to the groin. Unless the operation be done above the knee for gangrene of the

foot, we are almost certain to have recurrence in the wound with rapid spread of the disease and death. The practical outcome of this discussion should be to lay down a rule not to undertake any serious operation unless the urine has been tested for sugar, as well as for albumin. Since I assisted at an amputation of the breast in the practice of a friend, in which the urine had been found free from albumin prior to operation, but after the amputation the urine was found to be loaded with sugar, I have pursued this rule. Perhaps if the urinary examination included testing for sugar, as well as albumin, there would be fewer unexpectedly fatal terminations to operations and more cases of diabetes recognized.

DR. J. WILLIAM WHITE: If Dr. Hunt had been able to elicit from his correspondents the facts as to the coexistence or absence of certain other conditions likely to give rise to gangrene, we could better estimate the relative etiological importance of diabetes in these cases. Thus, in one of Dr. Agnew's cases which I had the opportunity of seeing, and upon whom I performed a knee-joint amputation, the subject was a man of 52 years, with chronic alcoholism and with marked atheromatous changes in the vessels. In this case we had, therefore, two conditions, either of which was competent to produce gangrene without the concurrent diabetes. Dr. Hunt's admirable and otherwise exhaustive paper would, perhaps, have been more conclusive had it been possible to include these points.

DR. S. SOLIS-COHEN: Dr. Nancrede's remarks suggest an explanation of the comparative meagreness of hospital records of diabetes, and of its supposed rarity among the poorer classes. Urinary analysis is not as general or as thorough as it ought to be. In the medical clinic of Jefferson Medical College Hospital, where it is the invariable rule to examine the urine of every patient, no matter how trifling the complaint, not a year passes that one or more cases of unsuspected diabetes, or at least glycosuria, are not discovered. Further, I would suggest that out-patient clinics or dispensaries, and not hospital wards, are the places to search for public records of diabetics of the poorer class. The Jefferson clinic has, I suppose, from five to ten or more cases of diabetes annually, in a service of about 4,000 new cases. At the Philadelphia Polyclinic, during nine months of this year, between 300 and 400 patients have been treated in the medical department, of whom three have been cases of diabetes. This large proportion is to be accounted for by the greater number of special clinics in the same building, reducing the attendance at the general clinic. Taking the entire non-surgical service of the institution, the proportion of diabetics would be reduced somewhat below that of the Jefferson clinic. Of course, in institutions like these, consultation cases increase the average of rare diseases of all kinds

above that of ordinary dispensaries. Still, considering the aggregate number of diabetics at these two clinics, of which I have personal knowledge, and remembering that urinary examinations are not as thorough as they should be in private practice among the poor, and that diabetics, as a rule, are walking cases until near the last; and, therefore, not to be looked for in hospital wards, I must doubt the force of Dr. Hunt's social distinction.

Dr. Cohen replied to Dr. Darrach that dependence was never placed upon a single test, and there was little probability that uric acid and kreatinine had been mistaken for sugar. One disadvantage of dispensary practice in these chronic cases was the inability to keep patients under observation for more than a short time. They wandered elsewhere, and might possibly be doubly or trebly reported.

DR. THOMAS S. K. MORTON: I should like to make more special point of what the practice of antisepsis enables the surgeon to accomplish in dealing not only with diabetes, but with all sorts and conditions of depraved system when upon them have been engrafted complications which, with modern methods of wound treatment, are at least entitled to have some attempt made for their relief. Under this heading would be included diabetes, Bright's disease, the graver infectious and contagious diseases, ataxia, and all other serious nutritional alterations dependent upon nerve or other change. Now the dangers principally to be dreaded in undertaking operations in persons subject to such diseases are those of *infection*. Little need be feared until this dire calamity has occurred. The most innocent forms of senile or other gangrene may at any time become so infected and change their nature to one of greatest malignancy. On the other hand, even large areas of necrotic tissue will not putrefy nor infect the system until bacterial decomposition takes place in them. I am convinced that infected gangrene existing without skin lesion usually has derived that complication from noxious bacteria lying deep in the various appendages of the skin. Hence the evident advisability of protecting a part about to become sphacelated by antiseptic covering; preferably by a carbolic or combined carbolic and sublimate dressing, for in such cases carbolic acid is a necessary constituent of the dressing that the fat and other skin glands may be deeply penetrated and disinfected by its influence—a property not possessed by sublimate and other disinfectants.

When infection takes place in a case of one of the above-mentioned diseases, the already depraved tissues are powerless to resist the onslaughts of bacteria, and frightful pillage and destruction are the result. Especially is the system unable to cope with the attacks of bacteria when diabetes is present, for then is provided in addi-

tion to the other favorite pabula of bacteria, glucose, which, in tissue solution, affords a most capital medium for the culture and dissemination of poisonous and tissue-destroying microorganisms.

We must then have ever in mind, that in dealing with surgical complications of any of the diseases which have been quoted, but more especially in the case of diabetes, that our object should be:

1. To prevent infection of a part about to become gangrenous, by instituting disinfection and subsequent protection; and, above and beyond all, never to apply a poultice.
2. Only to interfere surgically when absolutely necessary.
3. To operate only with thorough and powerful antisepsis—asepsis will never answer in these cases.
4. To relieve tension absolutely, and to eradicate as much of the diseased tissue as possible, and to disinfect thoroughly and render sterile all that cannot be so treated; for unless this be accomplished, a favorable result, or arrest of the destructive process, cannot be expected.
5. In suturing or dressing, to make no great traction upon any portion of the wound or its surroundings, and to provide most liberally for drainage.
6. To dress the wound in such a way as to prohibit subsequent infection, and to redress it upon the slightest indication.
7. To remember that non-union and non-healing will probably result, but that we may be bold in doing what seems indicated, for local harm cannot come save by infection.

DR. DE FOREST WILLARD: I cannot agree with the suggestion to make incisions to relieve the tension, I consider any interference injudicious in slow gangrene. The only safe plan is, to wait for the line of demarcation. Some months since, a man almost moribund came to the hospital with gangrene of the leg, and with crepitation extending as high as the hip-joint. Under excessive stimulation, twenty-four ounces of whiskey daily, he rallied, and I cut away the parts with scissors, through the knee-joint. A quick operation, or one near the part, would have caused death. Recovery has taken place, though a spot is now making its appearance on the toe of the remaining leg.

DR. TYSON: I am very glad to hear Dr. Darrach's remarks. I do not believe that sugar is ever present in normal urine. The copper-reducing substance in such supposed cases is most frequently uric acid.

DR. ASHHURST: The pain of diabetic gangrene so frequently alluded to this evening is, I think, rather a feature of the local process than of constitutional cause. Slow gangrene, especially if being superficial, it involves a greater extent of nerve distribution, is more painful than rapid or deep-seated gangrene, where the nerves escape to a great extent, or are quickly destroyed. The recommendation to amputate at a very high point in cases of spontaneous gangrene, is by no means

new, having been strongly urged many years ago by James, of Exeter; it has been recently revived by Mr. Holmes and other surgeons, but the general consensus of surgical opinion is against it. In traumatic gangrene, of course, the case is different. There the proper course is, I think, to amputate as soon as possible, at a point well above the limit of the gangrenous portion.

MISCELLANEOUS.

GLANDERS AS AN INFECTIOUS DISEASE.—The following letter, upon the subject of glanders as an infectious disease, and the propriety of killing animals suffering from said disease or farcy, as soon as recognized, is published for the information and guidance of the Army:

BALTIMORE, JULY 24, 1888.

To the Quartermaster-General U. S. Army, Washington, D. C.

General:—In reply to your communication of July 16, I have the honor to submit the following statements and opinions:

Glanders is an infectious disease in which the infectious agent has been demonstrated to be a living micro-organism—a bacillus.

The bacillus of glanders was discovered by the German bacteriologists Löffler and Shutz, in 1882, and the discovery has since been confirmed by several other competent bacteriologists. It is found in the nasal secretions and ulcers of the mucous membrane, in the "farcy-buds" pustules and enlarged lymphatic glands of infected animals, and it is probable that it is also sometimes present in the urine.

It is a slender rod, somewhat similar in appearance to the well-known tubercle bacillus, but more uniform in size and somewhat broader. In preparations stained with fuchsin or with Löffler's solution of methylene blue, clear spaces are often seen in the rods which have been thought by some authors to be spores, but this is doubtful, as Löffler has found that no development occurs after the bacilli have been exposed to a temperature of 55° C. (131° F.) for ten minutes.

Pure cultures of this bacillus have been shown to produce typical glanders in horses and asses, and it is recognized by bacteriologists as the cause of the disease. The disease may also be transmitted by inoculation to guinea-pigs and to field-mice, which animals (preferably guinea-pigs) may be used as a test of the infectious character of the nasal secretions of a suspected animal.

Exact experiments have shown that the bacillus of glanders is killed by exposure for five minutes to a 5 per cent. solution of carbolic acid, or by a 1 to 5,000 solution of corrosive sublimate.

In practice it will be best to rely upon boiling water for the disinfection of all articles which can be immersed in it without injury—rope halters, blankets, curry-combs, bits, etc. To keep on the safe side, half an hour may be fixed as the standard time during which articles to be disinfected shall be immersed in boiling water, or exposed to steam at a temperature of 212° F.

Articles of leather should be repeatedly washed with a 5 per cent. solution of carbolic acid or a 1 to 1,000 solution of corrosive sublimate; or immersed in such a solution for at least one hour. If the solution can be used hot, say 180° F., without injury to the material, this will be desirable.

QUANTITATIVE ESTIMATION OF ALBUMIN IN THE URINE.—The possibility of estimating the amount of albumen in fluid by the difference in specific gravity before and after the coagulation of the albumin has been exper-

imentally investigated by Huppert and Zahor, and the last-named has attempted to apply the method to the urine. He recommends that the proportion of acetic acid required to coagulate the whole of the albumin be ascertained by a preliminary experiment. A specimen of the urine after filtration is then treated with the necessary amount of acetic acid and divided into two parts. One part is put into a bottle, which must be stoppered with an India-rubber cork, and kept in a water-bath at a temperature of 100° C. for ten minutes or a quarter of an hour. The urine is then cooled and filtered, care being taken to prevent loss by evaporation during this process. The filtrate and the portion of acidified urine originally reserved are then brought to the same temperature, in a water-bath, and the specific gravity of both very carefully taken. The difference between the two figures thus obtained, multiplied by 400, the average coefficient ascertained by experiment, gives the amount of albumin in grams, in 100 cubic centimetres. The average error is stated to be plus or minus 0.0175 gram, but may amount to 0.05.—*British Medical Journal*.

THE CASE OF DRS. MCCOY AND WILDMAN.—In the case of the revocation of the certificate of Dr. Henry G. Wildman, of Chicago, by the State Board of Health, and the action of the Governor in overruling the same, it is but just to say that in the McCoy case, upon which the decision of the Supreme Court was based,—holding that McCoy's certificate was not regularly revoked—McCoy virtually swore the Board out of court, swearing that he had not received notice to appear before the Board and had had no notice of the revocation of his certificate. At the time of the revocation of McCoy's certificate he was advertising himself to be at St. Louis, Belleville and Alton. The Board served notice upon a person who represented himself as McCoy, yet in court McCoy swore that he had never been in Alton. In a similar case against McCoy now pending in the Supreme Court the Board presented two witnesses, one from Belleville and one from Alton, who swore to having served notice upon McCoy to appear before the Board, also notice of revocation of his certificate. McCoy appeared in the first trial brought against him, but not in the second—he being rarely in Chicago. The action of the Governor is simply based on the decision of the Supreme Court in the first case against McCoy, and on technicalities. The Board will not let the matter rest where it is now.

GAME FOR INVALIDS.—After being properly prepared, boil a fine young bird until it is three parts cooked; then remove the skin, pick all the flesh from the bones, and pound it in a mortar, with a little of the liquid in which it was boiled, three tablespoonfuls of finely sifted bread crumbs, a teaspoonful of grated lemon rind, a sufficient seasoning of salt, and a grating of nutmeg. When pounded to a perfectly smooth paste, put the mixture into a saucepan with a little more of the liquid, and let it simmer gently for ten minutes. When finished, the panada should be slightly thicker than good cream. It will keep quite fresh and sweet for three or four days, and can be heated, a few spoonfuls at a time, and served poured over a slice of nice, crisp, hot toast, or in a very tiny dish with sippets of hot toast inserted round about. Nothing more quickly destroys the capricious appetite of an invalid than having a large dish of anything, no matter how dainty, set before them; they require to eat often, but only a very little at a time.—*St. James Gazette*.

HEALTH OF PITTSBURGH.—The report for November shows the number of deaths to have been 316, a rate of 16.5 per 1,000 inhabitants annually. Infectious diseases numbered 157, as follows: Forty-one cases and 21 deaths of diphtheria; scarlet fever, 57 cases and 5 deaths; typhoid fever, 59 cases and 19 deaths. In addition, consumption caused 25 deaths; diseases of the nervous system, 31; circulatory, 17; respiratory, 62; digestive, 13; violent causes, 33.

BROOKLYN MEDICAL AID SOCIETY.—James D. Conklin, manager of the Brooklyn Medical Aid Society has presented to the organization his first semi-annual report. The society was at first opposed by the Kings County Medical Society, but it afterward approved of its methods as a relief to people of the middle and poorer class, who, by this means, were enabled to secure medical attendance and prescriptions without the cost that usually attends such services. The society now has twenty physicians and sixty-six druggists who supply its subscribers free with attendance and medicine. The subscribers pay on the insurance plan: From 16 to 70 years at from 2 cents to 18 cents a week, rates being made for families. The report contains the following interesting facts in connection with this new society. The books of the Society were opened April 16, and 2,188 certificates of subscription have been granted since then, 619 being between 16 and 30 years, 125 between 30 and 60 years, 987 between 1 and 10 years, and 459 between 10 and 16 years. Certificate holders have made 867 calls on the society's physicians and the physicians have made over 900 calls on patients. There have been 978 prescriptions given to members and dispensed by the druggists, all of which service and medicine has been furnished to the certificate holders free of charge, in accordance with the rules of the society. Manager Conklin requests that the medical staff be increased to twenty-five and that the number of druggists be increased to 100, to meet the growing demands of the society. Out of the total number of certificate holders, only six have died since the formation of this society.

OPERATION FOR TORTICOLLIS.—Dr. Levrat has devised a new method of treating torticollis. Instead of operating subcutaneously, he cuts down upon the sternal tendon of the sterno-mastoid muscle, effected by a longitudinal incision 2 centimetres long. He clears the tendon with the forceps, passes a grooved director under it, and divides it. He then divides any tissue that may bind down the muscles at that spot, sutures the wound, and dresses it antiseptically with iodoform and gauze. Over the dressings he places the following: The head being enveloped in cotton wool, a silicated bandage is wound horizontally around it at the level of the forehead, and a similar bandage vertically over the crown and under the jaw. Where these bandages meet at the level of the mastoid process on the sound side, a small hook, with the concavity looking upwards, is inserted. Another silicated bandage is wound round the body below the axillæ, and through the thickness of the bandage a hook is inserted in the middle line in front, having its concavity looking downwards. When the bandages have dried, the two hooks are connected by a band of India-rubber, which assists the sterno-mastoid of the sound side to keep up a continuous traction and so correct the deformity. This apparatus and the dressings are left untouched for fifteen days, and the success of the operation is said to be assured.—*The Lancet*.

DANGER IN THE POSTAGE STAMP.—The *Sanitary News* calls attention to the fact that a postage stamp may in various ways convey contagion. One of the simplest and most plausible is that in which a postage stamp, partially attached to a letter to pay return postage, is sent by a person infected with some disease to another person. The disease is transferred in the first place to the adhesive stamp through the saliva, and in being attached to the letter by the receiver the poison may be transmitted to him in turn through the saliva. Another cause may be the infection of the stamp with disease germs. The stamp, having been exposed in a room where a diseased person lies, may become slightly moistened and thus retain the germ. That this is true can be proved very simply by a microscopical examination. We often see a person holding change for a moment in the month, probably not knowing that investigation has shown that disease germs can be carried by money. If one could see through what

hands the money has passed they would hesitate before using such a third hand. Silver money is as bad as paper money, but while many would hesitate to hold a dirty bank note in their mouth, they think that a silver piece, because bright, is apparently clean.

HEALTH OF CHICAGO.—November's mortality reports show that 1,061 people died in Chicago during the month; of these 298 died of zymotic diseases. Diphtheria caused 105 deaths during the month. Typhoid fever caused the death of 40 persons, and scarlet fever of 14. One hundred and seventy-nine persons died during November from constitutional diseases, 111 of these deaths being caused by consumption. From local diseases there were 445 deaths, 77 being from infantile convulsions. Diseases of development caused 65 deaths, and 73 were the result of violence, 18 being killed by trains.

THE RED CROSS SOCIETY OF FRANCE.—This Society, which rendered invaluable services during the Franco-German war, dispenses large sums every year for the relief of old and disabled soldiers and their widows and orphans. Last year it distributed to 1,760 soldiers who had been wounded in war, and 327 dependent relatives, a sum of 47,506 francs, as well as numerous artificial limbs and surgical appliances. The perfection of different types of ambulance wagons is a subject to which the Society is giving much attention.—*British Medical Journal*.

N. W. OHIO MEDICAL ASSOCIATION.—The thirty-second semi-annual meeting of the Northwestern Ohio Medical Association was held in Toledo on December 13, with a large representation from all over Northwestern Ohio. Dr. C. E. Beardsley, of Ottawa, was elected President for the ensuing year, Dr. F. W. Brayton, of Carey, first Vice-President, Dr. J. A. Duncan, of Toledo, second Vice-President, Dr. Durbin, of Woodville, Secretary, and Dr. Hathaway, of Toledo, Treasurer.

DISTILLERY FED CATTLE.—The health authorities have refused to allow the cattle ordered from the Chicago distilleries to be fed in Lake View.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from December 15, 1888, to December 21, 1888.

Lieut.-Col. Charles T. Alexander, Surgeon, and Capt. Henry S. Kilbourne, Asst. Surgeon, detailed for duty on Army Retiring Board, to meet at Vancouver Bks., W. T., at the call of the President thereof. Par. 22, S. O. 292, A. G. O., Washington, D. C., December 15, 1888.

By direction of the Secretary of War, First Lieut. Nathan S. Jarvis, Asst. Surgeon, is relieved from duty at Ft. Leavenworth, Kan., and will report to commanding officer, Ft. Lewis, Col., for duty. Par. 14, S. O. 290, A. G. O., Washington, December 13, 1888.

Capt. Louis A. La Garde, Asst. Surgeon, is granted leave of absence for one month, with permission to apply for an extension of three months. Par. 15, S. O. 290, A. G. O., Washington, December 13, 1888.

Capt. William E. Hopkins, Asst. Surgeon, is detailed as member of the Army Retiring Board to meet at San Francisco, Cal., vice Major Henry E. Tilton, Surgeon, relieved. Par. 3, S. O. 294, A. G. O., Washington, December 18, 1888.

Capt. William F. Carter, Asst. Surgeon, leave of absence granted in S. O. 116, Dept. of Texas, November 12, 1888, is extended five months, by direction of the Secretary of War. Par. 4, S. O. 292, A. G. O., Washington, December 15, 1888.

Capt. George McCreery, Asst. Surgeon, is granted leave of absence for one month. Par. 4, S. O. 265, Hdqrs. Div. of Atlantic, Governor's Island, N. Y., December 15, 1888.

INDEX VOLUME XI.

	PAGE.		PAGE.		PAGE.
ABDOMINAL cystic tumors, early removal of.	374	Anomalies, reversive, in study of neuroses.	330	Asylum, Bloomingdale, to be removed.	66
section (see Laparotomy)		Anthrax, erroneous vaccination for.	537	Morris Plains, mismanagement in.	273
surgery, recent work in.	677	Antifebrin, in diseases of nasal passages	630	Athetosis, case of.	246
year's work in.	317	in headache.	196	Atrophy, muscular.	893
Abortion, criminal, and State laws.	428	Antipyretic treatment of typhoid and remittent fevers.	443, 477	Atropia, poisoning by.	298, 304, 316
laws.	573	Antipyretics, Croonian lectures on.	131	Autopsies, bacteriological examinations at.	597
management of.	787	influence on glycogen formation.	910		
Abortionists, professional.	912	in remittent fever.	347	BACILLUS lepræ.	313
Abscess, hepatic, two cases.	268	Antipyrin, contraindications of.	30	tubercle, aneurism and.	629
of liver, antiseptic incision and drainage in.	306	enemata, in labor.	537	best method of staining.	887
of stump after tonsillotomy.	344	hypodermatic injections of.	596	Bacteria of sea phosphorescence.	684
perityphlitic.	387	in cerebro-spinal meningitis.	17	Bacteriological examinations at autopsies.	597
pulmonary, surgery of.	249	influence on glycogen production.	910	Bacteriology, diagnostic.	743
traumatic subdural of brain.	596	in headache.	196	Baer, multilocular ovarian cystoma.	749
Abscesses, new method of treating.	86	in laryngismus stridulus.	882	Baker, Address in State Medicine.	397
Academy of Medicine, American, 634.	816, 847, 897	injections of.	128	malaria, and causation of periodic fever.	651
Accident, rare, death by.	899	in eye troubles.	30	Baldwin, Dr. W. L., death of.	360
Acetic acid, antiseptic in obstetrics.	490	Antiseptic, acetic acid as an, in obstetrics	490	Balloon, Petersen's, causing rupture of rectum.	744
carbolic, death from.	528	action of iodoform and ethereal oils.	272	Balsams, in diphtheria.	66
treatment of yellow fever, etc.	573	creolin as an.	910	Bamberger, death of.	845
Acids, proper time for administering.	380	injection in septicæmia.	596	Barium, action on the heart.	96
time for giving.	568	ointments.	236	Barksdale, irrigations for ulcerated bladder.	783
Aconite poisoning, apomorphine in.	90	oxycyanide of mercury.	451	Barnett, antipyretic treatment of typhoid and remittent fevers.	443, 477
Actinomycosis.	815	properties of saccharin.	167	Baths, cold, in typhoid fever.	236
communicability of.	342	saccharin solution.	823	Russian, effects of.	271
isolation of cattle with.	850	soap.	200, 452, 537	Bela, uses of.	16
primary, of brain in man.	272	spray.	272	Belladonna poisoning, apomorphine in.	90
Adelman, death of.	96	surgical cabinet.	368	Bergmann, resection of intestine.	96
Adonis vernalis in heart diseases.	15	Antiseptics, injections of in phthisis	308	Bermann, lactic acid in suppurative otitis.	195
Advertising, medical, in London	427	in tuberculosis.	308	Bichloride of mercury (see Sublimate).	492
Agnew, Dr. D. Hayes.	755	Aorta, aneurism of arch.	700	Billings, medical museums.	540
social life and surgical disease.	433	carcinomatous ulceration of.	707	Biedermann, called to Jena.	540
Air, of coal mines.	503	probable occlusion of.	415	Birth, four children at a.	432, 540
passages, upper, catarrh of.	227	Aortic arch, probable occlusion of.	850	six children at a.	133, 719
Akromegalia.	679	Apomorphine, in aconite and belladonna poison.	90	Bishop, adjustable lamp-bracket.	356
Albumin, estimation of.	923	Apostoli's clinic.	821	nasal speculum.	401
Albuminuria, and diseases of the placenta	630	Appendages, uterine, not diseased, extirpation of.	253	Pneumatic otoscope.	408
in the United States.	97	Appendicitis, causing perityphlitic abscess.	387	tonsillotomy.	408
Alcoholic, non- tonics and bitters.	455	Appendix vermiformis, anatomy, physiology and pathology of.	40	Bismuth, new test for.	133
Alcoholism.	846	Army, Medical Board.	36	salicylate.	416
Alexander's operation, Casati's modification.	456	Army Medical Department, changes in.	36, 72, 108, 144, 180, 216, 252, 324, 360, 396, 432, 468, 504, 540, 576, 612, 648, 684, 720, 756, 828, 864, 900.	Bitters, non-alcoholic.	455
48 cases.	793	Arsenic, in dermatology.	293	Blackburn, internal hydrocephalus.	159
Alkalies, in eczema.	594	in rheumatoid arthritis.	882	Bladder, intraperitoneal rupture of.	118
proper time for giving.	380, 568	Arteaga, Dr. Serapio.	167	rupture of, treatment of.	560
Alkaloids, hypodermatic use of.	236	Artery, internal mammary, wound of.	701	ulcerated irrigations in.	783
of cod-liver oil.	744	retinal, embolism of, massage in.	344	Blepharitis, ciliary, idiochloride of mercury in.	200
Alleman, Dr. L. J., death of.	360	Arthritis deformans, resection in.	560	Blind, physical education of.	132
Alum, in furuncle of the ear.	164	rheumatoid, arsenic in.	882	Blindness, hysterical, in the male.	171
Amaurosis, puerperal uræmic.	18	Ascaris, causing peritonitis.	491	psychical, and lesions of the angular gyrus.	450
Ambulance instruction for railway men.	142	Ascites, spontaneous paracentesis abdominalis in.	824	Blood, Harveian oration on.	704
tents and wagons, prize.	593	Ashhurst, excision of large joints.	457	human and animal.	348
work, Glasgow police and.	356	Asphalt pavements and health.	36	stains.	238
Ammonia treatment of typhoid fever.	736	Aspiration in suppurative pericarditis.	379	Boarman, hepatic abscess.	268
Anniotic liquor, communication with maternal blood.	568	Asphyxia, infantile, phosphorus in.	740	Bond, antecedents to renal lesions.	876
Amputating case, King.	501	Association, amendment to constitution of.	666	Bone, frontal, removal of portion of.	788
Amputation, primary, of leg, undressed for eight days.	275	American Medical.	633	grafts.	787
Amyl nitrite, antagonism to prussic acid substitute for.	740, 596	how will the special societies affect it?	741	parietal, absence of at birth.	490
Amylene hydrate.	342	time of meeting.	490	re-implantation of.	396
as a hypnotic.	90	American Public Health.	647	repair, contribution of.	242
Anæmia, in children, treatment of.	269	American Surgical.	529	Boric acid, advantages of.	393
pernicious, pathology of.	633	British Medical.	350	Borax, advantages of.	393
Anæsthesia, combined chloroform and cocaine.	596	London Sanitary Protective.	491	Bowman, Sir William.	391
Anæsthetic, effects of helleborein.	522	National, of Railway Surgeons.	71	Bozeman, renal tenesmus.	438, 482
local, chloride of methyl.	451	Ohio State Sanitary.	635	Bradford, subluxation of tibia.	625
methylene as an.	197	of Acting Assistant Surgeons.	790	Bradshaw, lecture on uræmia.	561
Andrews, Burry and, injuries of the spinal cord.	841, 855	Rains Co. Medical.	142	Brain, anchoring, consequences.	488
Aneurism of arch of aorta.	700	Tri-State Medical.	791	hydatids of.	385
treatment of.	489	Utica Medical Library.	755	overwork in children.	670
Aneurisms and tubercle bacillus.	629	Stigmatism, binocular.	622	surgery.	499
Animals, spreading infectious disease.	611			deeper.	814
Anisic acid, a substitute for salicylate of soda.	820			traumatic subdural abscess of.	596

	PAGE.		PAGE.		PAGE.
Brittan, dentogeny	724	Charities, State and municipal	284	Corneal ulcers, eserine in	15
Bronchi, syphilis of	636, 673	Charity, organized, how shall it work	284	sublimate in	416
Bronchial affections, cocaine solution sprays in	393	Cheatham, cataract extraction	717	Corns on soles of feet, treatment of	512
Bronchitis, chronic, Murrell's work on pills for cough in	427	Cheesue	778	treatment of	451
Broncho-pneumonia, in children	811	Chemistry for pharmacists	465	Corpuscles, educated	71
Brower, strophanthus in exophthalmic goitre	626	Chest expansion, very great	687	Coroner system of United States, report on	167
Brown, gynecologist and general practitioner	690	Chevreur	491	Corrosive sublimate (see Sublimate).	
septic dysentery	223	Chicago Post-Graduate school	744	Coryza, menthol solution in	823
surgical treatment of urethra	300	Child, extraordinary vitality in a stoic of seven years	395	Cowden, sulphur in sciatica	13
Bubo, suppurating venereal, surgical treatment of	414	Children, brain overwork in	670	Crimp, glassblowers	391
Buchanan, electrolysis in stricture	322	broncho-pneumonia in	811	Crane, Dr. James, death of	683
Buck, anatomy of elephant's ear	136	hepatic incompetence in	906	Cremation, garbage	513, 815
reflex causes of naso-pharyngeal catarrh	135	lohar pneumonia in	788	in Buenos Ayres	576
Budge, Dr., death of	242	study of diseases of	525	in Italy	491
Buenos Ayres, water supply for	396	Children's diseases, salol in	559	Society, building for	820
Bulgaria, sanitary service of	206	Chisolm, Cataractomies	617	in Manchester	321
Bulkley, syphilis as a non-venereal disease	865	cylinder in headache and eye pains	581	Cremator, at Milwaukee	672
Bull, treatment of opacities of the vitreous	169	Chloroform, and cocaine anesthesia	596	in Troy	684
Buller, pulsating exophthalmus	169	benzoated	702	Crematories	755
Burnett, aural vertigo	134	deaths from	576	Creolin as an antiseptic	910
refraction of healthy cornea	170	enormous doses of	321	internal medicine	235
Burry, and Andrews, injuries of the spinal cord	841	in eclampsia, suit for giving water as a vehicle	684	uses of	846
Busey, neuralgia of lingual nerve	697, 714	Chlorosis, artificial suppression of men- ses in	90	Croup, membranous, identity with diphtheria	732
voice culture in prevention of phthi- sis	783	Cholera and crowded rooms	780	Crowley, Mr.	464
Byford, removal of uterus for fibroids	62	infantile, food in	524	Cuba, yellow fever in	564
CÆCUM, anatomy, physiology and pathol- ogy of	40	Pettenkofer's views on	608	Culbertson, binocular astigmatism	622
colloid carcinoma of	606	sublimate in	787	Cullen, Medical College of Virginia	861
perforation of in typhlitis	9	vaccine	288	Cure, parlor game	383
Cæsarean section	62, 97	Chorea	325	Cutter, food in nervous diseases	145
abuse of	535	of soft palate	554	Cylinder, .25 D. for headache and eye- pains	381
conservative	211	Chorion, ruptured, repair of	593	Cyst, suppurating abdominal	125
Caffein, as a cardiac stimulant	128	Choroid, œdema of	171	Cystic tumors, abdominal, early removal of	374
Calculus, encysted	820	Circumcision, reform of	576	Cystitis, saccharin in	127, 537
California, health of	791	City, shall I remove to	141	Cystoma, multilocular ovarian	749
Callosities, treatment of	451	Clark, Sir Andrew	31	Cystotomy, suprapubic	531
Campbell, electrolysis in removal of ne- oplasms	266	Clarke, antepartum hour-glass contrac- tion of uterus	81	DANFORTH, evolution of cystic kidney	541
Canada, medical practice in	36	Classification of diseases	417	Davis, dilatation of œsophageal stricture	262
Cancer (see Carcinoma).		Clavicle, fractured, pad for	96	Deaf, club for	249
Candies, poisonous, simple tests for	252	Climate and mortality in Great Britain	820	Deafness from syphilis	379
Cannabin, in Basedow's disease	812	for consumptives	683	pilocarpine in	702
Capiron, glioma	173	Clinics, Paris	821	Death during hypnotism	670
Carbolic acid, death from	528	Clothing, infected, penalty for handling	684	false certificates of	850
Carbonic acid saline solutions	96	Cloves, oil, antiseptic action of	272	from carbolic acid	525
Carcinoma and tuberculosis	343	Coal mines, air of	503	sudden, and enlarged thymus	241
by skin grafts	812	Pennsylvania, sanitary condition of	827	in nursing infants	853
colloid of cæcum	606	pure heat from	239	unusual cause of	132
double, of colon	606	Cocaine, and chloroform anesthesia	596	Deglutition, intubation and	420
of breast, treatment of	565	and oleaginous substances	744	Delirium tremens, methylal in	199
of intestine	699, 713	poisoning	706	Dental disorders, relation to eye disease	568
of pylorus in a living skeleton	706	solution sprays in bronchial affec- tions	393	Dentine, sensitive	701
Carcinomatous ulceration of aorta	707	Codeine, as an analgesic	55	Dentist, education of	880
Carotid, common, tying for pulsating exophthalmos	169	in abdominal pain	488	Dentistry, school of for Negroes	755
Carriage, Polyclinic	164	Cod-liver oil, alkaloids of	744	Dentogeny	724
Cars, bobtail	313	substitute for	560	Denture, misfit	321
Carter, antipyrin and antifebrin in head- ache	196	Coffee, effect on urine	882	Denver, overcrowding of the profession in	313
Caruncula lachrymalis, putrefaction of	277	Cohen, syphilis of larynx, trachea, and bronchi	636, 673	De Schweinitz, unilateral optic neuritis	859
Casati's modification of Alexander's op- eration	456	Coleman, treatment of hypermetropia	901	Dermatotomy, arsenic in	293
Cataract extraction	717	College, Jefferson Medical	133	Detroit, clinical school at	62
luxated, treatment of	90	Medical, of Virginia	848, 861	Dextrocardia	211
of glass-makers	499	Northwestern Ohio	386	Diabetes, pathology of	393
operations, one eye closed	617	of State Medicine	36	relations to heart disease	59
Cataractomy, without iridectomy	505	of Physicians and Surgeons, N. Y. 72, 464		semolina in	18
use of bandage after	505	Woman's Medical, Philadelphia	72	Diabetic gangrene	85, 919
Catarrh, naso-pharyngeal, reflex causa- tion	135	Colleges, medical, selling the same goods twice	454	Diagnosis, electrolysis in	449
of upper air-passages, treatment	227	Colon, double carcinoma of	606	exploring needle in	344
Catheter, flexible, as drainage-tube	136	ulceration of	314	the tongue in	271
Cats, spreading infectious disease	611	Color-blindness, a report on	792	Diaphragm, rupture of	354
Cattle, cost of pleuro-pneumonia of	815	on English railways	242	Diarrhœa, chronic, talc in	200
disease, investigation of	781	Color tests, new	172	infantile, talc in	139
lump-jaw, isolating	850	Colostrum corpuscle	302	treatment of	846
Cautery, Paquelin, in epididymitis	595	Congress, International, Ninth, correc- tions to Vol. II	104	summer, of infants, causation and treatment	140
Cellulitis, pelvic, in the male	241	Medical, history of seal	851	microorganisms of stomach and intestines in	140
Census, quinquennial	313	Physiological	96	microscopic appearances in	140
Centenarians, large mortality of	349	of American Physicians and Sur- geons	359, 422, 491	Didama, obstinate hæmaturia in	190
Centimetre, cubic, measurement, natural	241	on tuberculosis	353	Diet in dysentery	31
Cerebral localization	492, 494	South American Sanitary	97	Dietetic use of saccharin	849
surgery, of motor area	523	Congresses, scientific, in 1889	241	Dietetics, address on	37
three cases	529	Conner, sarcoma of scalp	233	circular of committee on	819
tumor	602	Constipation, in infancy	910	Digestion, effects of pepper and mustard on	820
Cervix, transverse laceration of	665, 672	with hemorrhoids, treatment of	740	Digitalis, action of	91
Charcot's clinic	821	postural treatment of	68	in pneumonia	846
Charities and corrections, National con- vention	284	Consumptives, climate for	683	when should it be prescribed?	129
		Convulsions, infantile, treatment	666	Diphtheria	559
		Cook, cancer of intestine	699, 713	and sepsis neonatorum	66
		Cord, spinal, jurisprudence of injuries of	841, 841, 855	balsamics in	66
		tumor of	89	carried by a turkey	756
		Cords, vocal, hyperplastic catarrh of	90	identity with membranous croup	732
		Corlett, prairie itch	517	malignant, outbreaks of	779
		Cornea, periodical neuralgia of	787	papid in	451
		transplantation of	70, 707	sour milk and buttermilk in	717
				spread by cats	611

	PAGE.		PAGE.		PAGE.
Diphtheria, sudden heart-failure in . . .	813, 823	Epidemics and neglect . . .	360	Friedrich's disease, five cases . . .	303
therapeutics of . . .	23, 393	Epididymitis, cautery in . . .	595	Frothingham, cataractomy without iri-	
Disease, getting ahead of . . .	707	Epiglottic, supra-ueoplasms . . .	85	dectomy . . .	505
mysterious, at Rogers City . . .	348	Epilepsy, amateur treatment of . . .	276	Furuncle, singular case of . . .	538
surgical, social life and . . .	433	galvanization of thyroid in . . .	335	Furuncles, ointment of nitrate of mer-	
Diseases, classification of . . .	417	with infantile hemiplegia . . .	679	cury in . . .	344
of winetasters . . .	396	Epistaxis of Brightie origin . . .	139		
preventable, inquests after deaths	612	Rpithelioma of cervix, warm water injec-	630		
from . . .	612	tions in . . .	393	GAFFKY, appointed to Giessen . . .	456
Disinfectant, sublimate as a . . .	68	Erectile tumors, electrolysis in . . .	393	Galvanic current, in stings of physalia . . .	491
Disinfecting apparatus, new . . .	71	Erysipelas, ichthyol in . . .	645	Galvanization of thyroid in epilepsy . . .	235
institutions in Germany . . .	324	Erythrophlein in heart trouble . . .	909	Game for invalids . . .	817
letters . . .	808	Esmarch, Professor . . .	360	Gangrene, diabetic . . .	858, 919
Disinfection and disinfectants . . .	562, 641	visit to New York . . .	164	Garbage cremation . . .	513, 815
by steam . . .	744	Ether in heart-failure . . .	564	Garnett, Dr. A. Y. P., death of . . .	72
method at New Orleans quarantine . . .	575	Etheridge, Cæsearean section . . .	275	obituary of . . .	105
of foul ships . . .	893	Ethics, no code of in England . . .	502	tribute to . . .	215
of instruments . . .	179	of marriage . . .	19	Gas test in abdominal wounds . . .	521
practical aspects of . . .	293	medical, and colleges . . .	873	caution in . . .	526
Disinfecter, professional . . .	401	Everts, expert testimony . . .	313	rectal plug for . . .	908
Distomum hæmatobium, epidemic caused	242	Examiners, Board of, of North Carolina	457	Gaston, cerebro-spinal meningitis . . .	155
by . . .	827	of Virginia . . .	170	Gastrolith in man . . .	166
District of Columbia, health of . . .	528	Excision of large joints . . .	169	Gastrostomy, case of . . .	123
Diverticulum, large intestinal . . .	386	Exophthalmos, pulsating . . .	873	Gay, tracheotomy and intubation . . .	532
Dlanhy, Johann, death of . . .	288	ligation of carotid for . . .	873	Gazette médicale de Liège . . .	744
Doctor, ballade of a busy . . .	333	Expert testimony . . .	873	Gerrish, address to Academy of Medicine	317
Doctors' bills . . .	456	Experts, medical . . .	707	Getz, antiseptic surgical cabinet . . .	368
Drainage in puerperal peritonitis . . .	288	Extralite, new explosive . . .	804	Gibier, to study yellow fever in Florida	563
of summer resorts . . .	136	Eye, ablation of, resection of optic nerve	342	Gibson, monuments to medical patriots	32
tube, flexible catheter as . . .	287	instead . . .	385	Glands, as an infectious disease . . .	923
Drains, scamped . . .	312	billiard cue tip impacted in . . .	568	Glands, scrofulous, excision of . . .	202
Druggists, rights of under local option	177	disorders, relation to dental . . .	581	syphilitic tumors of . . .	137
Drops, a few, at a dose . . .	343	pains, .25 D cylinder for . . .	30	Glassblower's cramp . . .	391
Drugs, taken by nurses, influence on	136	troubles, antipyrin injections in . . .	804	Glass-makers, cataract of . . .	499
nurslings . . .	734	headaches from . . .	685	Glaucoma, following retinitis hæmor-	
Drum membrane, false . . .	598	influenced by nasal disease . . .	19	rhagica . . .	377
Dry medication, and dry syringe treat-		in tubes . . .	684	Glucose, estimation of in urine . . .	87
ment . . .	317	FACTORIES, children in . . .	380	Glycerine, as a surgical dressing . . .	629
Duckworth, Sir Dyce, on medical bul-	286	Fallopian tube, rupture of, recovery	910	Glycogen, influence of antipyretics on . . .	910
letins . . .	762	after . . .	576	Glycosuria, artificial, from salicylates . . .	200
Dudley, year's work in abdominal sur-	242	False-teeth plates, poisoning by . . .	167	Goitre, cystic new treatment of . . .	85
gery . . .	31	Farmy suture . . .	151	exophthalmic, cannabine in . . .	812
Duncan, acute rheumatism in an infant	223	Fast, long, death after . . .	206	strophanthins in . . .	626
Dunning, double urethra and vagina . . .	164	Fee, of \$10,000 . . .	450	parenchymatous, electrolysis in . . .	599
Dysentery, salive aperients and diet in	136	Feeding, artificial, of infants . . .	558	Gonorrhœa, abortive treatment of . . .	499
epidemic, microbe of . . .	137	infant . . .	606	injections of thallin in . . .	776
septic . . .	602	report on . . .	604	Gonorrhœal infection of oviducts and	
	679	Felons, ointment of nitrate of mercury	736	ovaries . . .	389
	602	in . . .	126	Goodell, fibroid uterus weighing 18 lbs.	389
	229	Femur, ununited fracture, treatment of	651	gonorrhœal infection of oviducts and	389
	631	of neck, treatment . . .	668	ovaries . . .	389
	466	Fenger, colloid carcinoma of cæcum . . .	709	nervous rectum . . .	5
	242	double carcinoma of colon . . .	236	ovarian tumor, malignant . . .	385
	352	fibrocystosarcoma of uterus . . .	863	year's work in oophorectomy . . .	460
	68	osteomas of the nose . . .	711	Gossler, Minister von . . .	386
	132	Perment, milk-curdling, of stomach . . .	846	Gordon, vaginal hysterectomy . . .	296
	838	Fever, carbon compounds in treatment	792, 827	Gould, Dr. F. J., death of . . .	718
	756	of . . .	913	Gmunden . . .	389
	94	heat, treatment of . . .	594	Gradle, headache . . .	339
	565	periodic, causation of . . .	651	suit against . . .	635
	449	puerperal, preventable . . .	668	Grafts, mucous, transplantation of . . .	378
	393	typhoid and remittent, treatment of	443, 477	osseous . . .	787
	31	atypical forms of . . .	709	skin, cancer by . . .	812
	266	cold baths in . . .	236	Grant, intraperitoneal rupture of the	
	194, 335, 322,	in Providence . . .	863	bladder . . .	118
	466	new treatment . . .	711	Grawitz, sudden death in nursing infants	553
	88	Pettenkofer's views on . . .	608	Griffith, Kiug surgical case . . .	501
	466	secondary mixed infection in . . .	453	Gross, treatment of cancer of breast . . .	565
	88	treatment in childhood . . .	909	Gunshot wound of kidney, nephrectomy	
	172	Fibroid polyps of uterus . . .	713	for . . .	533
	344	Fibroids, removal of uterus for . . .	62	of liver, complicated . . .	450
	340	Fibroma of larynx . . .	838	Gynecologist and general practitioner . . .	690
	136	Fibrocystosarcoma of uterus . . .	604	Gynecology, electrolysis in . . .	31
	524	Fibromata, naso-pharyngeal . . .	803	how it is taught . . .	180
	893	Fibro-myoma, laparotomy for . . .	197, 277	Gyrus, angular, lesions of and psychical	
	55	Fistula, vesicovaginal after hysterectomy	811	blindness . . .	450
	688	Plynn, Dr. Percival H., death of . . .	792		
	289	Poeticide, its prevention . . .	805	HADRA, Dr. B. E.	216
	56	Poetation, extra-uterine . . .	886	Hæmatocele, laparotomy for . . .	788
	452	Food, adulteration of . . .	792, 827	Hæmaturia, inspection of ureters in . . .	163
	133	in Minnesota . . .	913	obstinate . . .	190
	286	fluid, regulation of in heart disease	594	Hæmoptysis, iodoform in . . .	200
	349	in nervous diseases . . .	145	Hæmomeadiastinum . . .	701
	349	question in Switzerland . . .	540	Hæmorrhoids, with constipation, treat-	
		Forceps, axis-traction of Stephenson . . .	679	ment of . . .	740
		for nasal polyp . . .	287	Hæmorrhagic infarct of uterine myoma . . .	132
		Fothergill, death of . . .	30	Hagar, Dr. A., death of . . .	565
		Foundling asylum, mortality of a . . .	815	Hagen, F. W., death of . . .	96
		Fowl, tuberculosis of . . .	353	Hair, superfluous, removal by electroly-	
		Fowler's solution, chloroform water as a	488	sis . . .	565
		vehicle for . . .	788	Hall, early operation in obscure pelvic	
		Fracture, compound of frontal bone . . .	217	pain . . .	361
		of bones of face and upper jaws . . .	242	Hamilton, aneurism of aortic arch . . .	700
		of scapula . . .	450, 558	yellow fever in Florida . . .	782
		ununited of neck of femur, treatment	421	Hammock and swing . . .	671
		of . . .	427	Harrison, mullein in malarial troubles . . .	663
		France, specialism in . . .	421	Hartigan, oophorectomy for prolapse of	
		Frederick III. report on case of . . .	427	ovary . . .	412
				Harveian oration . . .	704
				Hatfield, hepatic incompetence . . .	606

	PAGE.		PAGE.		PAGE.
Headache, antipyrin and antifebrin in . . .	196	Infant feeding . . .	151	Kiesselbach, Dr. . . .	166
25 D. cylinder in . . .	537	report of committee on . . .	206	Kilcher, Dr. Karl, death of . . .	216
from eye-troubles . . .	894	Infants, artificial feeding of . . .	164	King, hysteria in pregnancy . . .	810
from intranasal disease . . .	456	cholera of, substitute for milk in . . .	524	Kiosks, for women in London . . .	241
from naso-pharyngeal and nasal trouble . . .	339	constipation in . . .	910	Kipp, bilateral horizontal nystagmus . . .	137
inveterate . . .	279	influence on of drugs taken by nurses . . .	343	pulsating exophthalmos . . .	170
Health, a Bureau of . . .	827	nursing, sudden death in . . .	853	Klein, von, address to American Rhinological Association . . .	405
a Board of for Georgia . . .	900	Infection, bank notes and . . .	323	Knap, Dr. Hermann . . .	215
asphalt pavements and . . .	36	conditions relating to . . .	747	Kollock, luxation of crystalline lens . . .	395
at great elevations . . .	781	secondary mixed in typhoid . . .	453		
department of New York, organization of . . .	504	Infections disease, national defense against . . .	469	LABOR, painful, enemata of antipyrin in . . .	537
National Board of . . .	781	diseases, inquests of deaths from . . .	612	posture in . . .	235
public, a minister of . . .	386	isolated pavilions for . . .	242	rupture of vagina during . . .	384
Heat fever, treatment of . . .	126	Pettenkofer's views on . . .	753	third stage of . . .	308
Heart, calcification of valves of . . .	340	Injection, disinfectant, in leucorrhœa . . .	128	Laboratories, for investigation . . .	933
Heart disease, helioboreas viridis in . . .	666	Injections, intra-uterine, dangers of . . .	139	Laboratory, marine biological . . .	133
relation of diabetes to . . .	59	of thallin, in gonorrhœa . . .	776	Lactic acid in suppurative otitis . . .	195
regulation of fluid food in . . .	594	Inquests of deaths from preventable diseases . . .	612	Laily, medical education of . . .	466
diseases, treatment of . . .	15	Insane, commitment and detention of . . .	284	Lamb, death from strangulated hernia . . .	315
failure, ether in . . .	823	hospital, Pennsylvania State . . .	864	tumors of glands . . .	137
sudden, in diphtheria . . .	813	immigrant . . .	826	Lamp-bracket, adjustable . . .	167
fatty, laxatives in . . .	90	in the interest of the . . .	809	Langenbeck, memorial to . . .	314
hypertrophy of, with variable murmurs . . .	415	Insanity, medico-legal points in . . .	769	Langerhans, death of . . .	786
stimulant, caffeine as a . . .	128	moral, decision regarding . . .	600	Lanolin, effect on microorganisms . . .	376
sounds, recording by phonograph . . .	564	Insecticide, naphthalin as an . . .	524	Laparotomy for extra-uterine pregnancy . . .	197
therapeutics, modern . . .	307	Instruction, post-graduate . . .	818	for fibro-myoma . . .	277
Heat, pure, from coal . . .	239	Instruments, tariff on . . .	201	for pelvic hæmatocele . . .	788
Helleborein, anesthetic effects of . . .	522	Insurance companies, physicians and . . .	394	for tubercular peritonitis . . .	307
Helleboreus viridis in heart disease . . .	666	Intestinal diverticulum, large . . .	528	for volvulus . . .	788
Henry, Dr. M. H., honors to . . .	635	irritation, causing reflexes . . .	205	in lesions of uterine appendages . . .	522
radical cure of varicocele . . .	649	obstruction, surgical aspects . . .	46	Lard adulteration . . .	827
Hemiplegia, infantile, with epilepsy . . .	679	perforations, gas test for . . .	521	Larrabee, schoolroom a factor in causing disease . . .	618
Hepatic incompetence . . .	906	surgery, discussion on . . .	76	Laryngeal phthisis, hot vaseline spray in . . .	413
Hernia, inguinal, radical cure of . . .	341	tract, oxygen enemata in diseases of . . .	258	surgery of . . .	249
strangulated, death from . . .	315	Intestin, cancer of . . .	699	Laryngectomy, considerations on . . .	199
Hillmantel, hydrogen gas test in gen-shot wounds of intestines . . .	83	new method of resection of . . .	192	Laryngismus stridulus, antipyrin in . . .	882
Hoffman, perityphilitic abscess . . .	387	Intestines, wounds of, gas test in . . .	83	Laryngitis, pseudo-membranous, tracheotomy in . . .	757
Homiculture . . .	765	Intubation and deglutition . . .	420	tubercular . . .	620
Horse-flesh for food . . .	505	tracheotomy and . . .	532	Laryngotomy, on a horse . . .	886
Horse, laryngotomy on a . . .	886	tubes . . .	174	Larynx, cancer of . . .	199
Hospital, Albany . . .	792	Invalids, game for . . .	923	fibroma of . . .	888
animal . . .	806	Iodized oil . . .	321	intubation of . . .	880
Arnot-Ogden . . .	284	Iodoform, antiseptic action of . . .	272	leech in . . .	132
floating . . .	781	bituminate of . . .	452	man without . . .	76
infant, at Virginia Beach . . .	781	in hæmoptysis . . .	200	syphilis of . . .	636, 673
internes, opening for . . .	488	Ireland, Dr. W. W. . .	565	Lashkevitch, legacy from . . .	277
London cancer . . .	537	Iridectomy, cataractomy without . . .	505	Lausanne, university for . . .	456
Military, at Alexandria . . .	488	Irideremia, double congenital . . .	172	Lavender oil, antiseptic action of . . .	272
new, at Tacoma . . .	828	Iris, tuberculosis of . . .	462	Laxatives for fatty heart . . .	90
Pennsylvania State Insane . . .	864	Itchl . . .	389	Lead poisoning . . .	421
St. John's Guild seaside . . .	354	Itch, prairie and lumberman's . . .	517	Lee, dry syringe treatment . . .	734
Sunday collections . . .	820	JACKSON, carbon compounds in treatment of fever . . .	736	National defense against disease . . .	469
Verdi's, at Villanova . . .	133	œdema of choroid and retina . . .	171	post-graduate instruction . . .	818
Hospitals, London, teaching in the . . .	178	Jacobi, therapeutics of diphtheria . . .	23	Leech in the larynx . . .	132
Hotz, transplantation of the cornea . . .	70	Jaggard, relation of endometritis gravidarum to pernicious vomiting in pregnancy . . .	289	Leg, primary amputation of, undressed for eight days . . .	275
Humerus, luxation, with fracture of scapula . . .	242	Jail, a disgraceful . . .	683	Legislation, medical, and medical education in New Zealand . . .	631
Hunt, diabetic gangrene . . .	858	Jambul . . .	23	Lens, calcareous . . .	490
Hydatids of brain . . .	385	Japan, longevity in . . .	22	unusual luxation of . . .	174
Hydrannios, rare case of . . .	321	medical society of . . .	36	Lenses, gradation of . . .	395
Hydrocephalus, chronic internal . . .	159	Jaundice, epidemic . . .	391	Leonard, acute rheumatism in a child of two months . . .	231
Hydrofluoric acid vapor, action of on tubercle bacilli . . .	90	Jaw, upper fracture of . . .	217	Lepra, bacillus of . . .	313
Hydrogen gas test for wounds of intestines . . .	83	Jaws, etiology of irregularities of . . .	829	treatment of . . .	380
rectal plug for . . .	908	Jenkins, case of furuncle . . .	538	Leprosy, in Dakota . . .	786
Hydrophobia, experiment in . . .	899	Jenner, Sir William . . .	815	treatment in Hawaii . . .	490
Hygiene, Italian societies of . . .	743	Jennings, tracheotomy in pseudo-membranous laryngitis . . .	757	Lewis, new treatment of typhoid fever . . .	711
Hyoscine, effects of . . .	812	Jessup, moustrosities and maternal impressions . . .	519	Leucorrhœa, disinfectant injection in . . .	128
use and application of . . .	462	Johnson, four cases of oophorectomy . . .	448	Life, social, relation to surgical disease . . .	433
Hypermetropia, determination and treatment of . . .	901	fibroid polypus of uterus . . .	713	Ligaments, round, shortening . . .	793
Hypodermatic injections through the clothes . . .	385	Illinois Practice Act . . .	819	Line, water purification by . . .	360
use of alkaloids . . .	236	suppurating abdominal cyst . . .	125	Linsley, cremation of garbage . . .	513
Hypnotic action of sulfonal . . .	742	Johnstone, extra-uterine pregnancy . . .	577	Lipamin, substitute for codliver oil . . .	391
amylene hydrate as a . . .	95	Jones, chorea . . .	375	Liver, abscess of . . .	268
sulfonal as a . . .	14	contributions to teratology . . .	545	abscess of incision and drainage in diseases of, oxygen enemata in . . .	306
Hypnotism, death during . . .	670	New Orleans Medical and Surgical Journal . . .	102	guns-shot wound of . . .	288
therapeutic value of . . .	699	vacuum pneumatic spirometer . . .	11	tissue emboli . . .	450
Hyrth, Professor . . .	72	KALA-AZAR . . .	348	wounded, suture of . . .	20
Hysterectomy, vaginal . . .	266	Kansas, medical societies in . . .	504	Liverpool, water for . . .	17
vesico-vaginal fistula after . . .	811	Keen, cases of brain surgery . . .	504	London, university for . . .	282
Hysteria in pregnancy . . .	810	Kellogg, cases of Alexander's operation . . .	499	Longevity in Japan . . .	645
Hysterical spasm of the œsophagus . . .	599	oxygen enemata in diseases of the liver and intestines . . .	793	Louisiana, pharmacy law for . . .	22
		Kelly, Casarean section . . .	538	Love, identity of croup and diphtheria . . .	430
ICHTHYOL, in erysipelas . . .	645	Kemp, Dr. George T. . .	360	Loye, Dr. Paul . . .	732
Illinois Practice Act, influence of . . .	819	Kennedy, forceps for nasal polypi . . .	287	Lunacy, a cause of . . .	133
Imagination, power of . . .	242	Keratitis, hypopyon, sublimiate in . . .	416	Lungs, melanotic tumors of . . .	828
Immigration . . .	139	Kidney, cystic, evolution of . . .	541	Lupis, sublimite injections in . . .	53
Incontinence of urine in children . . .	780	conditions preceding lesions of . . .	876	Lyman, injuries of spinal cord . . .	23
Indians, disease-ridden . . .	780	movable, nephorrhaphy for removal for shot wound and tuberculosis . . .	645		844
Inebriety, alcoholic, jurisprudence of . . .	371			McClellan, catarrh of upper air passages . . .	227
Ingals, nasa-pharyngeal fibromata . . .	803			McGuire, artificial urethra . . .	530, 695
Ingersoll, criminal abortion and laws . . .	420			pathogenic germs . . .	747
Infant, acute rheumatism in an . . .	286				

	PAGE.		PAGE.		PAGE.
McIntosh, S. D.	468	Minneapolis, health department of	898	Oliver, embolism of central retinal artery	172
Mackenzie, Billroth on	216	Mittendorf, symptomatic myopia	171	new color tests	172
McKone, atropia poisoning	304, 316	Mole, hydatidiform	592, 601	Onchoa, action of	523
McMurtry, typhilitis, with perforation of cecum	9	Monette, spontaneous paracentesis abdominalis	824	Oophorectomy for prolapse of right ovary	412
Malaria	651	Monstrosities	545	four cases of	448
Malarial troubles, muller in	663	and maternal impressions	519, 646	year's work in	460
Malingering, case of	820	Moore, hysterical blindness in the male	171	Ophthalmia, prevention of	599
Malpractice, damages for	719	Morgue, for London	635	Ophthalmometer of Javal and Schiotz	170
suit for giving chloroform in eclampsia	684	in Paris	391	Opium habit, cause and prevention of	816
Mamma, carcinoma of, treatment of	595	Morphine habit, victim to	820	how it is acquired	419
Mammæ, absence of both	421	Mortality, in Great Britain	820	Optic nerve, resection of	342
Maps, pharmaceutical	396	of a founding asylum	815	neuritis, unilateral	859
Marcy, buried animal suture	73	Morton, Dr. T. G.	815	Ord, Dr., and the family doctor	502
Margarine act of England	133	Motor area, can it be safely removed in large pieces?	523	Os, internal, tumor of, in membranous sac	354
Marine-Hospital Service, changes in, 72, 108, 180, 288, 360, 432, 576, 612, 828	864	Mudd, new method of resection of intestine	192	Osgood, inveterate headache	279
Markham, feticide	805	Mullein in malarial troubles	663	Osler, Dr. Ord and the family doctor	592
Marriage, ethics of	399, 429, 502	Mundell, hydatidiform mole	592, 601	Medical Examining Board of Virginia	429
physiological	826	Murder trial, medico-legal question	629	Professor, to go to Johns Hopkins	555
Marshall, fracture of upper jaw bones of face	217	Murders, Whitechapel	683	Osteoma, of nose and accessory cavities	185
Marvel, case of, placenta prævia	591, 601	Murphy, laparotomy for fibro-myoma	197, 277	Osteo-periostitis, metatarsal	178
Massage in embolism of retinal artery	344	purulent peritonitis in young infant	314	Otitis, suppurative, lactic acid in	195
in old ulcer of leg	236	ulceration of colon	314	Otoscope, pneumatic	608
Material impressions, monstrosities and	519	Mustard, effects of on digestion	820	Ouabaine, action of	400
Mattress filling, filthy	780	Museums, medical	422	Ovarian cystoma, multilocular	749
Maxilla, etiology of irregularities of	829	Mutilation, self	671	tumor, of suspected malignancy	389
fracture of	217	Myers, treatment of peritonitis	721	tumors, fifty operations for	100
Meat, bad, as food	886	Myomata, uterine	785	Ovaries, gonorrhoeal infection of	389
in Omaha	755	Myopia, symptomatic	171	Ovary, prolapse of, oophorectomy for	412
tuberculosis	353			sarcoma of	602
Medical bulletins	598			Oxygen enemata, in liver and intestinal diseases	259
cases, publication of	22	NAPLES, to be cleansed	670	Oxypteridin, action of	591
colleges and medical ethics	19	Naphthalin, as an insecticide	524	Ozone treatment of phthisis	31
education, legislation and	631	Naphthol, beta	52		
of Chinese	576	Nasal, intra-, disease, headache from	456	PACKARD, suprapubic cystotomy	531
supply and demand in	382	disease, antipyrin in	630	Packing, wet and dry, effects of	699
Examining Board of Virginia	345	and eye troubles	685	Pagliani, called to Rome	576
legislation in New Zealand	490	speculum	411	Pain, abdominal, codeine in	488
patriots, monuments to	32	Naso-pharyngeal fibromata	803	pelvic, early operation in	361
practice in Canada	36	Naturalist, the physician as a	381	Palate, chorea of	554
profession, wear and tear of	93	Navy Medical Department, changes in, 72, 108, 180, 216, 252, 238, 324, 360, 468, 504, 576, 612, 648, 684, 720, 756, 828, 864	900	Paper, tissue, for dressings	883
protection of	670	Needle, exploring, in diagnosis	344	Papoid in diphtheria	451
students, residential buildings for at Guy's Hospital	396	Nelson, extra-uterine foetation	886	Paracentesis abdominalis, spontaneous in acitis	824
in London	744	method of staining tubercle bacilli	887	Paralysis, pseudo-hypertrophic muscular	807
women in England	349	sarcoma of ovary, with twisted pedicle	602	Park, cerebral localization	494
News, Illustrated	468	Nephrectomy for shot wound and tuberculosis	533	Parkes, 50 operations for ovarian tumors	100
Medication, dry	734	Nephritis, diagnostic sign of	776	Parlor game cure	383
Medicine, language of	237	Nephrophraphy for movable kidney	645	Parthenocine	96
preventive, in Victorian era	321	Nerve, optic, resection of	342	Parvin, Doleris écouvillon	679
State, address in	397	Nervous diseases, food in	145	Delore's blunt hook	679
Medico-legal question, of Billings' murder trial	628	system, sympathetic, influence in disease	584	Mathieu's instrument for washing out the uterus	679
Medico-sanitary service, centralization of	385	Neuralgia, lumbo-abdominal, salol in	666	practical obstetrics in the schools	817
Meisenbach, rectal plug	908	of lingual nerve	697, 714	Stephenson's axis-traction forceps	679
Memory, loss of from accident	671	periodical, of cornea	787	Pasteur Institute, opening of	788
Meningitis, cerebro-spinal	155	Neurasthenia, differentiation and treatment	715	treatment	645
antipyrin in	17	Neuritis, unilateral optic	859	Patella, fracture of, suture of	415
new treatment of	645	Neurosis, reversible anomalies in study of	330	Pavilions, isolated, for infectious disease	243
Menstruation, artificial suppression of, in chlorosis	499	Newman, electrolysis in stricture	335	Payne, Dr. F. H.	791
Mental alienation in New Zealand	670	Nightingale, Florence	391	Pedigo, amyl nitrite and prussic acid	749
impressions, monstrosities and	646	North Carolina, Board of Examiners of	313	Pelvic cellulitis in the male	241
Menthol, in pruritus labii	666	influences of sympathetic system in disease	584	pain, early operation in	361
solution in coryza	823	Nuisance, photographing	386	Pengra, case of athetosis	246
Mercuric bichloride (see Sublimite)		Nurses, home for	886	Penny wise, pound foolish	883
Mercury, biniodide, spray in tuberculosis carbolate of	17	Illinois Training School for	705	Peurose, extra-uterine pregnancy	386
iodochloride, in ciliary blepharitis	200	influence of drugs taken by on nurslings	343	surgical aspects of intestinal obstruction	46
nitrate, ointment, in boils and felons	344	male, training school for	301	Pension examinations, oculists in	588
oxycyanide, best antiseptic	451	trained, for the country	301	Pepper, effect of on digestion	820
Metatarsal osteo-periostitis	778	Nursing, for the sick poor	321	Pepsin, digestive power of	140
Methyl, chloride, as a local anæsthetic	451	Philadelphia system	340	Perforation in empyma	55
Methylal in delirium tremens	199	Nutrition, effect of upon functions of organs	360	Pericarditis, suppurative, aspiration in	379
Methylene as an anæsthetic	197	influence on mother's milk	343	Peritonitis caused by round worms	491
Michigan, health in	72, 395, 540, 719, 864	Nystagmus, bilateral horizontal	137	Peru balsam, antiseptic action of	272
Microorganisms, effect of lanolin on	776			Pettenkofer's views on cholera and typhoid fever	608
of stomach and intestines in infantile summer diarrhoea	140	OBSTETRICS, acetic acid an antiseptic in	490	zymotic diseases and quarantine	753
relations to injuries and diseases	498	hot water in	393	treatment of	721
Midwifery, Sioux, in Chicago	165	practical in the schools	817	tubercular, laparotomy for	307
reply	286	Occupation-disease, cataract of glass-makers	499	puerperal, drainage in	456
Military hospital at Alexandria	468	Oculists, value of in pension examinations	588	purulent, in young infant	314
Milk, adulterated	540	O'Dwyer, intubation tubes	174	Pharmacists, chemistry for	645
colostrum corpuscle in	564	Osophagus, hysterical spasm of	599	Pharmacopœia, new Austrian	462
condensed, Rigi, condemned	564	stricture of, gradual dilatation of	262	U. S., revision of	747
curdling ferment of stomach	846	Oil, grey, in syphilis	462	Pharmacy in Russia	635
mother's, influence of nutrition on preservative, bicarbonate of soda as a sickness, cause of	343, 396	iodized	321	law for Louisiana	430
substitute for in infantile cholera	241	Oils, ethereal, antiseptic action of	272	progress of	468
sterilized	234	Ointments, antiseptic	236	section of	57
tuberculous	353	Oleander, properties of	18	Phonograph for recording heart and lung sounds	564
Miller, bone repair	242			Phosphorus in infantile asphyxia	740
Mills, cerebral localization	492			Photographing a nuisance	386
Mines, coal, Pennsylvania, sanitary condition of	827			Phthisis, antiseptic injections in	308

	PAGE.		PAGE.		PAGE.
Phthisis, laryngeal, surgery of	249	Railways, overwork on	628	Sabine, Dr. T. T. death of	360, 464
ozone treatment of	31	Ransohoff, the cæcum and appendix	40	Saccharin	30
sanitarium for	815	Rectal insufflation with gas, caution in	526	antiseptic properties of	167
tannin in	491	Rectum, nervous	5	dietetic use of	849
voice culture in prevention of	753	rupture of, caused by Peterson's balloon	744	in chronic cystitis	127, 537
Physician, as a naturalist	381, 564	Rectus, section or exsection of	509	solution, in eye troubles	823
Physicians and insurance companies	594	Reed, early removal of abdominal cystic tumors	374	Sahli, Professor	277
summer corps of	284	extirpation of uterine appendages not diseased	253	St. Gilgen	389
Physiology in public schools	634	intestinal obstruction	1	St. John's Guild seaside hospital	354
Picroadonidin	630	vesicovaginal fistula	811	St. Wolfgang	389
Pilocarpine in deafness	702	Reeves, ethics of marriage	502	Salicylate of bismuth	416
influence on tympanic mucous membrane	488	Reid, Dr. E. Miller	612	of soda, anisic acid a substitute for	820
Placenta, diseases of, and albuminuria	630	Reflex causation of naso-pharyngeal catarrh	135	Salicylates, producing glycosuria	200
prævia, case of	591, 601	Reflexes, from intestinal irritation	205	Salicylic acid in scarlatina	702
retained, treatment of	499	Renal tenesmus	438, 482	Salol, in children's diseases	559
Plenro-pneumonia, cost of	815	Resection in arthritis deformans	560	in lumbo-abdominal neuralgia	666
Plumbing, defective and scarlet fever	314	of venous trunks in operations on malignant tumors	580	Saline aperients in dysentery	31
Pneograph	672	Responsibility, moral and criminal	284	Salt in sickness of pregnancy	524
Pneumonia, broncho- in children	811	Retina, cedema of	171	Salzburg	399
digitalis in	846	puncture of for detachment	172	Salzkammergut as a health resort	389
fibrinous, epidemic of	781	Retinitis hæmorrhagica followed by glaucoma	377	Sands, Dr. Henry B., death of	744, 755
lobar, in children	788	REVIEWS:		Sanitarium for phthisis	815
mechanism and treatment of	109	American Public Health Association—		Sanitary code, in Italy	743
surgery in	249	Disinfection and Disinfectants	562	information by comparison	884
treatment of	306	Billings. The Southern Cattle Plague	357	medico- centralization of	385
Poison bottle, new	96	Bullein. Dialogue against the Fever Pestilence	394	Protective Association, of London	491
Poisoned animals, antopsies on	349	Campbell. The Language of Medicine	237	science, degrees in	349
Poisoning by atropia,	298, 304, 316	Carter. Synopsis of Medical Botany	897	Sanitation, economy of	537
by head-cheese	864	Claiborne. Theory and Practice of the Ophthalmoscope	826	in India	885
ice-cream	205	Croom and McMurtry. Manual of Minor Gynecological Operations	34	value of	395
Poisonous candies, simple tests for	252	Diamantopolos. Die Typhus Icterodes bei Smyrna	58	Sarcoma of ovary	602
effects of tin salts	323	Dujardin-Beaumetz. Diseases of the Liver	718	of scalp	233
Polyclinic, Cincinnati	683	Gowers. Manual of Diseases of the Nervous System	251	Sargent, Dr. Joseph, death of	635
Polyp, nasal, forceps for	287	Hadra. Lesions of the Vagina and Pelvic Floor	34	Scalp, sarcoma of	233
Pomeroy, abortion laws	573	Hirst. System of Obstetrics	358	Scapula, fracture, with luxation of humerus	242
Porter, gastrostomy	123	Jenks. Disorders of Menstruation	358	Scarlet fever, defective plumbing and liability to	314, 288
subglottic neoplasms	85	Leuf. Hygiene for Baseball Players	430	poison, activity of	612
treatment, new, of cystic goitre	85	Liebermeister. The Infectious Diseases	574	salicylic acid in	702
Post-graduate instruction, need of	818	McMurtry, Croom and. Minor Gynecological Operations	34	Schadé, chorea of soft palate	554
Potassium, chlorate, fatal dose of	464	Michigan. Proceedings of Sanitary Convention at Albion	429	Schenck, hydrogen gas test	521
nitrate, accident from an attempt to pulverize	359	Mitchell. Dissolution and Evolution	358	monstrosities and mental impressions	646
Poultry selling, legislation on	72, 683	Newell. Best Surgical Dressing	502	repair of ruptured chorion	593
Powell, etiology of pyrexia	749	Ohio. Annual Report of State Board of Health	395	Schmidt, Dr. H. D., death of	792
Practitioner, illegal, conviction of an illegal, exposure of	828, 863	Payne. Manual of General Pathology	575	School, New York Post-Graduate	276
illegal, fined	781	Parreidt. Compendium of Dentistry	898	Schoolroom a factor in causing disease	613
Pregnancy, experimental uræmia in extra-uterine, laparotomy for	671, 386	Pennsylvania. Report of State Board of Health	825	Schools, physical education in the physiology in the	68, 634
hysteria in	810	Pennsylvania. Transactions of State Medical Society	573	town, in Switzerland	367
management of	577	Pomeroy. The Ethics of Marriage	309	Schultze, called to Bonn	576
pernicious vomiting of, relation to endometritis gravidarum	289	Ramsey. Applied Anatomy of the Nervous System	681	Sciatica, sulphur in	13
sickness of, salt in	524	Sajous. Annals of the Universal Medical Sciences	34	Scrofulous glands, excision of	202
Prescribing, bad	35	Stillman. The Life Insurance Examiner	718	Seaports, national defense of	469
Priapism, operative treatment of	200	Vaughan and Novy. Ptomaines and Leucomaines	681	Seasickness, death from	314
Price, abuse of Cæsarean section	535	Vicary. Anatomie of the Bodie of Man	394	Sée on the treatment of aneurism	488
Philadelphia system of nursing	340	Wood. Therapeutics	575	Semolina in diabetes	18
pyosalpinx with rupture	751	Wyman. Experimental Surgery	357	Senn, microorganisms, and injuries and diseases	498
recent work in abdominal surgery	677	Reynolds, gradation of leuses	231	Sepsis neonatorum and diphtheria	66
Prince Louis Ferdinand, a doctor section or exsection of rectus	242, 509	radical cure of pytergym	161	Septicæmia, antiseptic injections in	596
Prison reform	348	Rheumatism, acute, in an infant	286	puerperal, discussion on	570
Prize, for microscopists	826	500 cases	558	Servia, medical faculty for	133
Profession, in New Mexico	850	Ribs, fracture, with shot wound of liver	450	Sewage, chemical purification of	249
over-crowding of in Denver	313	Richards, false drum membrane	136	destroyers nuisance	313
Prostatic obstruction, artificial urethra for	530, 666	polypoid angiomia of ear	136	disposal of	31
Pruritus labii, menthol in	749	Ricketts, arsenic in dermatology	293	disposal of commission, French	276
Prussic acid, antagonism to amyl nitrite	161	Rifle, Lebel	391	farms, Berlin	377
Pterygium, radical cure of	22	Rosse, reversible anomalies in neuroses	330	ventilators, tall chimneys as	324
Publication of medical cases	668	Rough on rats, suicide by	138	Shields, enlarged tonsils	784
Puerperal fever a preventive disease	18	Rowell, ethics of marriage	429	Ships, foul, treatment of	575
uræmic amaurosis	570	Ruge	635	Shoemaker, beta-naphthol	52
septicæmia, discussion on	249	Ruhle, death of	242	Shot wounds, of abdomen, treatment of	671
Pulmonary abscess, surgery in	490	Russia, pharmacy in	635	Sibbett, the American Academy of Medicine	818
disease, chronic, pupillary changes	249	statistics of	634	Skin diseases, arsenic in	293
surgical aid in treatment of	564	Ryan, pseudo-hypertrophic muscular paralysis	807	grafts, cancer by	812
sounds, phonograph for recording tuberculosis, surgery of	249	SAHIN, Dr. R. S., death of	864	Smallpox, decline of in England	349
Pump, the Allen surgical	564			measures against	421
Pupils, changes of, in pulmonary disease	490			method of dealing with	464
Pus germ, action of agents on	140			urology of	568
Pyelorus, cancer of, in a living skeleton	706			Smith, errata in Vol. 2, International Congress Transactions	104
Pyosalpinx with rupture	751			laceration of cervix	665, 672
Pyuria, inspection of ureters in	163			vaseline spray in phthisis	413
Pyrexia, etiology of	749			Snakes in India	395
Quack doctors' pamphlets	241			Soap, antiseptic	200, 452, 537
exposure of a	863			Social degradation	284
Quackenbos, late Dr. Henry F.	464			Societies, medical, number and variety of in Kansas	777, 504
Quacks preferred	276			Society, American Ophthalmological	169
Quarantine, bill to perfect	61			American Otological	134
Pettenkofer's views on	608, 753			Chicago Medico-legal	855
Quarrel, an unseemly	563			Clinico-pathological of Washington, officers	593
Quimby, Dr. I. N.	72			Gynæcological of Chicago, 62, 97, 317, 602, 635	
Quinine, posology of	234			Italian Medical	600
RAILWAY passengers, hygienic protection of	35			Lake County	386
				Massachusetts Medical	68

	PAGE.		PAGE.		PAGE.
Society, Medical of the District of Columbia,	137, 277, 314, 601, 672, 713	Telephone, use of by physicians	791	Urine, incontinence of in children,	139
Medical, of Japan	36	Temper, ill., cause of	756	normal, composition of	56
of Virginia	708, 745, 782	Teratology, contributions to	545	Urinal, new	850
Obstetrical of Philadelphia,	386, 460, 534, 677, 749, 795	Tetanus, infectious nature of	787	Urology, clinical of smallpox	568
of German Dermatologists	557	nature and origin of	893	Uterine appendages, electricity in lesions of	522
Pennsylvania State Medical	781	transmissibility of	787	not diseased, extirpation of	253
Philadelphia Co. Medical,	23, 174, 242, 565, 636, 673, 859	Thallin, tartrate of, injections of	776	displacements, electricity in	88
Saline Co., Kansas	600	Theobald, double congenital irideremia	172	injections, dangers of	139
Suffolk District Medical	246, 279	Theophyllin	96	myoma, hæmorrhagic infarct of	132
Washington, Obstetrical and Gynecological	648	Thomson, electrolysis in stricture	194	myomata	785
sodium bicarbonate as a milk preservative	396	Mary F., death of	538	tympanites	744
sulpho-ichthyolate, antiseptic action	272	reply to Newman	406	Uterus, antepartum hourglass contraction of	81
Sohn, calcification of cardiac valves	340	Thymus, enlarged, sudden death and	241	double, and vagina	762
Sonchus oleraceus, hydragogue action of	506	Thyroid, galvanization of, in epilepsy	235	fibrocystosarcoma of	604
Spartiste, hydragogue action of	506	Tibia, subluxations of	625	fibroid, 18 pounds	569
Spathe in heart diseases	15	Tin salts, poisonous effects of	323	polypus of	713
Specialty advertising	95	Thermometric bureau, Yale	324	removal of for fibroids	62
Sphenoid, functions of	274	Todd, melanotic lung tumors	53		
Sphygmograph, new clinical	229	Tommasi, Salvatore, death of	277		
Spinal cord, injuries of, jurisprudence of	841, 844, 855	Toner, history of seal of Ninth International Medical Congress	851	VACCINATION and revaccination	477
Spine, lateral curvature of, apparatus for recording	600	Tongue as guide to diagnosis	271	Vagina, rupture of during labor	384
Spirometer, vacuum pneumatic	600	Tonics and bitters, non-alcoholic	455	Valves, heart, calcification of	340
Spray, antiseptic	272	Tonsillotomy, improved	410	Van Bibber, mechanism and treatment of pneumonia	109
State Medicine, college of	36	Tonsils, enlarged, treatment of	344	use of mineral waters	773
Statistics, medical, of Russia	634	Tornados, prize studies of	784	Vanderpoole, Dr., suit against	421
mortuary	409	Torticollis, operation for	924	Van de Warker, Address in gynecology	180
Steam, disinfection by	744	Trachea, syphilis of	636, 677, 815	Van Hook, sarco-iliac tuberculosis	552
Steele, surgical treatment of empyema	688	foreign body in	815	Varicocele, radical cure of	649
Stings, of physalia, galvanic current in	491	Tracheotomy and intubation	532	Vaseline spray, hot, in phthisis	413
Stomach, milk-curdling ferment	846	in pseudo-membranous laryngitis	757	Veins, large resection of in operations on tumors	560
Strophanthine	18	Transplantation of mucous glands	378	Ventricles, cerebral, tapping	814
Strophanthus, an antipyretic	823	Tubercle bacilli, action of hydrofluoric acid vapor on	90	Verneuil's clinic	821
in exophthalmic goitre	626	bacillus, aneurisms and	629	Virchow, medal to	96
Strabismus, section or exsection of rectus in	509	Tubercular cavities, surgery of	249	Virginia, Medical College of	848, 861
Stramonium, effects of	820	Tuberculosis, action of antiseptics in	308	Medical Examining Board of	345, 429, 527, 682, 703
Stricture, electrolysis in	322, 335, 466	biniodide of mercury spray in	740	Vertigo, aural, excision of membrana tympani and malleolus	134
Strongylus paradoxus	595	cancer and	343	Visualfield, candle test of	824
Stubblefield, education of the dentist	880	congress on	242, 353	Vitreous, treatment of membranous opacities of	169
Sublimite, as a disinfectant	68	contagion of	353	Voice culture, in prevention of phthisis	783
in cholera	787	diagnosis of	353	Volvulus, laparotomy for	788
in hypopyon keratitis	416	of iris	462		
injections in lupus	23	of kidney, nephrectomy for	533	WALDEYER, Professor	277
solutions, value of	130	of the fowl	353	Walk, how to	705
Succi's liquid	288	sacro-iliac, treatment of	552	Walking, use of heel in	790
Suicide, from rough on rats	138	surgery in	249	Wall, observations on yellow fever	691
Suicides, French	288	surgical treatment of	353	Warts, treatment of	451
Sulfonal as a hypnotic	14	verrucosa cutis	353	Water, boiling, in surgery	16
hypnotic action of	742	Tuberculous animals, dangers of	353	chloroform, as a vehicle	488
Sulphur, in sciatica	13	meat and milk	353	for Liverpool	352
Sulphurous anhydride in phthisis	128	Tuke, Dr. T. H., death of	31	hot, douche, in endometritis	56
Summer corps of physicians	284	Tumor cerebral	602	injections of in epithelioma of cervix	630
resorts, drainage of	288	of internal os, in a sac	354	in obstetrics	393
Suprapubic lithotomy, rupture of rectum during	744	of spinal cord	89	purification by lime	390
Surgery, intestinal, discussion on	76	Tumors, abdominal cystic, early removal of	374	supply of Jersey City	888
Sutphen, puncture of retina for detachment	172	electrolysis in removal of	266	Waters, mineral, use of	773
Suture, buried animal	73	malignant, surgery of	68, 560	Watering places, improvement of	391
of fracture of patella	415	melanotic of the lungs	53	Webster, calcareous lens	174
Surgery, deeper brain	814	Turnbull, artificial tympanic membranes	378	Wedding, professional	133
Surgical cabinet, antiseptic case, King	501	Turpentine, antiseptic action of	272	Wells, cases of Freidrich's disease	303
progress, wave of	21	Tympanites and tympanitis	61	Welsh, tubercular laryngitis	620
Suture of wounded liver	17	uterine, treatment of	744	Whedcock, retinitis hæmorrhagica	377
Sweating system in Holland	684	Tympanitis and tympanites	178	Whelpley, a few drops at a dose	177
Switzerland, English physicians in	22	Tympanic membranes, artificial	378	White swelling, electricity in	30
food question in	540	Typhaum, effect of pilocarpine on mucous membrane of	488	Wick, the Billings murder trial	628
town schools in	367	perforations of, treatment of	9	Wile, new method of treating abscess	86
Sympathetic system, influence of in disease	584	Typhilitis, with cæcal perforation	596	Willard, nephrectomy, two cases	533
Syphilis as a non-venereal disease	865	Treatment of	596	Williams, Dr. E., obituary of	839
deafness from	379	Typhoid, antipyretic and abortive treatment of	443, 477	Wilson, opium habit	816
grey oil in	462	disease	348	Winckelsters, diseases of	396
of larynx, trachea, and bronchi	636, 673	fever, ammonia treatment of	736	Women in the professions	900
Syphilitic glands, extirpation of	211	atypical forms of	709	Wood, address on dietetics	37
tumors of glands	137	in Providence, treatment	999	Dr. J. M., death of	598
Syngomelia	217	new treatment of	863	Wounds, gunshot, of intestines, gas test	83
		Pettenkofer's views of	711	Worms, round, causing peritonitis	491
		secondary mixed infection in	608	Wright, alcoholic inebriety	371
		treatment by cold baths	453	Dr. C. E., death of	900
		Typhus icterodes	236	oculists in pension examinations	538
		Ulcer of leg, massage in	236		
		Ulcers, corneal, eserine in	15	YELLOW fever	491
		torpid, new treatment for	452	acid treatment of	573
		University Magazine	565	diagnosis, prognosis and treatment	691
		Unterach	380	Gibier to study	563
		Uremia, Bradshawe lecture on	561	in Cuba	864
		experimental, in pregnancy	671	in Florida	420, 864
		Uramic amaurosis, puerperal	18	Pettenkofer's views on	608
		Ureters, value of inspection of	163	Young, candle test of visual field	824
		Urethra, artificial, for prostatic obstruction	530, 300		
		modern surgical treatment of	194	ZENNER, insanity	769
		stricture of, electrolysis in	537	Ziegler, acid treatment of yellow fever, etc.,	573
		Urine, ammoniacal, saccharin in	882	sour milk and buttermilk in diphtheria	717
		effect of coffee on	87	Zymotic diseases, Pettenkofer's views on	753
		estimation of glucose in			



R American Medical Association.
15 Journal
A48
v.11
cop.2

Biological
& Medical
Serials

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY

STORAGE

